

AFIT/GEE/ENV/99M-5

TEXTUAL ANALYSIS OF ENVIRONMENTAL  
COMPLIANCE ASSESSMENT PROGRAM FINDINGS

THESIS

Arthur L. Gepner Jr., Captain, USAF

AFIT/GEE/ENV/99M-5

Approved for public release; distribution unlimited

19990625 011



**The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U. S. Government**



AFIT/GEE/ENV/99M-5

TEXTUAL ANALYSIS OF ENVIRONMENTAL COMPLIANCE  
ASSESSMENT PROGRAM FINDINGS

THESIS

Presented to the Faculty of the Graduate School of Engineering  
of the Air Force Institute of Technology  
Air University  
Air Education and Training Command  
In Partial Fulfillment of the Requirements for the  
Degree of Master of Science  
in Environmental Engineering and Management

Arthur L. Gepner Jr., B. S.  
Captain, USAF

March 1999

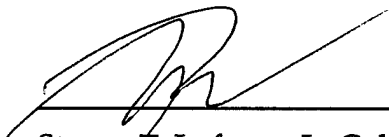
Approved for public release, distribution unlimited.



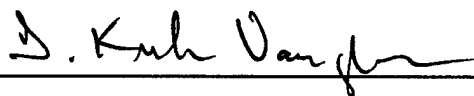
TEXTUAL ANALYSIS OF ENVIRONMENTAL COMPLIANCE ASSESSMENT  
PROGRAM FINDINGS

Arthur L. Gepner Jr., B.S.  
Captain, USAF

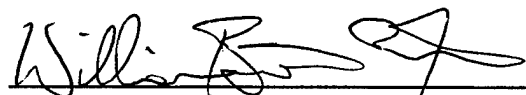
Approved:

  
\_\_\_\_\_  
Steven T. Lofgren, Lt Col, USAF, Ph.D.  
Advisor

21 May 99  
date

  
\_\_\_\_\_  
D. Kirk Vaughan, Ph. D.  
Reader

20 May 99  
date

  
\_\_\_\_\_  
William Brent Nixon, Lt Col, USAF, Ph.D., P.E.  
Reader

20 May 99  
date



## Acknowledgments

I would like to thank my advisor, Lt. Col. Steve Lofgren. I would also like to extend thanks to Dr. Kirk Vaughan and Lt. Col. Nixon for their assistance on my committee. Heartfelt thanks and love go to my wife Audrey for keeping me healthy, happy, and sane through my trying times. A thanks is given to Lt. Dave Kellner for helping me keep in shape so I had energy for this endeavor. Derrill and Lisa Goldizen also receive thanks for their support in keeping Audrey and I both sane when things were too much for us. To Fletcher, man's best friend, he kept by my side no matter the time of day or my state of mind.

I would like to thank Dr. Brandt and Dr. Sabanaugh for giving me hope. A special thanks and admiration goes to Dr. Herrington for her wonderful support through my most trying and dark time.

I would also like to thank Capt. Tim Haynie for his diligent help in providing me with whatever data I needed.

Thank you all,

Arthur L. Gepner Jr.



## Table of Contents

|   | Page |
|---|------|
| Acknowledgments .....                                   | i    |
| List of Figures .....                                   | iv   |
| List of Tables .....                                    | v    |
| Abstract .....  | vi   |
| I. Introduction .....                                   | 1    |
| General Issues .....                                    | 1    |
| ECAMP .....   | 3    |
| Types of Data .....                                     | 5    |
| Significance of Research .....                          | 6    |
| Scope .....   | 6    |
| II. Background .....                                    | 8    |
| Overview .....  | 8    |
| Hermeneutics In Practice .....                          | 10   |
| III. Methodology .....                                  | 12   |
| Overview .....  | 12   |
| Problem Definition .....                                | 12   |
| Approach .....  | 13   |
| Rationale Employed .....                                | 16   |
| Data Sources .....                                      | 18   |
| Data Analysis .....                                     | 19   |
| Content and Form of Results .....                       | 21   |
| IV. Results .....                                       | 23   |
| Overview .....  | 23   |
| First Data Set .....                                    | 23   |
| Formal Definitions .....                                | 24   |
| Connections between categories and sub-categories ..... | 26   |
| Tangible problems .....                                 | 27   |
| Human-interaction problems .....                        | 29   |
| Selective Coding .....                                  | 31   |
| Second Data Set .....                                   | 34   |



|  |     |
|--|-----|
| Refinement.....                              | 34  |
| Emergent theory.....                         | 38  |
| V. Discussion .....                          | 40  |
| Overview.....                                | 40  |
| Data Weakness.....                           | 40  |
| Formation of Code Definitions Discussed..... | 41  |
| Suggested Actions .....                      | 44  |
| Areas of Further Research .....              | 46  |
| Appendix A: Case Study One .....             | 48  |
| Appendix B: Case Study Two.....              | 122 |
| Bibliography.....                            | 204 |
| Vita.....                                    | 206 |



## **List of Figures**

|  | Page |
|--|------|
| Figure 1. Theoretical Framework for Case Study 1 .....                   | 33   |
| Figure 2. Theoretical framework Case Study 2.....                        | 35   |
| Figure 3. Bias and Uncertainty Influences in Theoretical Framework ..... | 36   |



## **List of Tables**

|                                      | Page |
|--------------------------------------|------|
| Table 1. Textual Analysis Flow ..... | 14   |



## Abstract

The United States Air Force (USAF) is committed to assessing environmental compliance; this is achieved in the USAF through the Environmental Compliance Assessment Management Program (ECAMP). These ECAMP audits are designed strictly to assess compliance performance at one point-in-time. They are not intended to assess underlying environmental management systems.

This study provides insight into the USAF Environmental Management System (EMS) through a textual analysis of ECAMP data. The analysis discovers eleven categories that emerged from the data: performance, communication, documentation, coordination, training, guidance, notification, resource, human resource, material resource, and financial resource. These categories display a hierarchical relationship. This hierarchical structure exhibits more categories in communication-related definitions. The evidence suggests that the communication-related category accounts for the largest number of environmental compliance deficiencies. This study indicates that assessors should be provided training that enables them to document environmental audit findings in a manner that allows the data to be used to understand and improve existing EMSs.



# Textual Analysis of Air Force Environmental Management

## Program Findings

### I. Introduction

#### General Issues

Concern for the environment has been ever increasing over the past few decades. It is generally accepted that the growth of modern environmentalism started with the release of *Silent Spring* in 1962. With the publication of *Limits to Growth* in 1974, the perspective enlarged from specific impacts to the local environment to a view of whether the global environment could sustain humanity in the future. Environmental awareness continues to evolve, as industrial society becomes increasingly aware of its relationship to the natural environment.

Organizations are also responding to global environmental concerns. Various pressures influence these responses, including governmental regulations, market forces, internal elements, and financial considerations (Schot and Fischer, 1993; Reinhardt and Vietor, 1996). Governmental regulations have motivated most organizational behavior to date. Regulations often have enforcement provisions that enable agencies to levy fines and other penalties upon activities that are not complying with regulatory requirements. One response to this external threat has been the advent of environmental compliance audits. An environmental



compliance audit is a detailed investigation of regulatory requirements that apply to an organization and organizational activities in response to these requirements in order to determine whether the entity is in compliance with environmental requirements. Cahill states that "the EPA defines environmental audits as a systematic, documented, periodic and objective review by regulated entities of facility operations and practices related to meeting environmental requirements" (Cahill, 1989:I-15).

Organizations have been conducting environmental audits since 1977 (Cahill, 1989). Since that time, a large volume of written data relative to organizational environmental management has been generated. This data is of value for measuring the environmental performance of the organization relative to compliance with regulatory requirements. However, compliance audits merely identify existing problems. They do not explicitly identify deficiencies in underlying environmental management systems.

Organizations are beginning to adopt a systemic perspective regarding environmental management. This is largely due to the promulgation of international standards for environmental management systems (ISO, 1996). One requirement of these standards is for organizations to audit their management systems. This requirement is not the same as a compliance audit. Rather, it is an audit of the underlying structure (policies, planning, structure and responsibilities, checking and corrective action, and management review).



In theory, improvement of this underlying structure will result in improvements in environmental performance.

The data generated as a result of compliance audits may be helpful in obtaining glimpses into underlying structural weaknesses. Environmental compliance audits are a first step towards correcting problems and shortcomings. Compliance audit findings serve to identify environmental management deficiencies. However, an audit alone can only identify, not correct, these deficiencies (Cahill, 1989).

This research explores environmental compliance audit findings in an attempt to gain a basic insight into underlying environmental management systems weaknesses. This exploration utilizes a hermeneutic approach. Textual analysis investigates environmental audit findings in an attempt to identify intrinsic order in the findings that might lead to improved understanding and aid in targeting improvements directed toward environmental management systems.

### **ECAMP**

The Environmental Compliance Assessment Management Program (ECAMP) is divided into protocols that enable the ECAMP team to concentrate its auditing efforts in specific areas. The 13 protocols are: air emissions management, hazard communication, hazardous materials management, hazardous waste management, health and safety, community right-to-know, pesticide management, petroleum, oil and lubricant management, solid waste



management, storage tanks management, toxic substances management (polychlorinated biphenyl, asbestos, radon, lead-based paint), wastewater management, and water quality management (Cahill, 1989). Many activities on an AF installation impact the environment broadly and are therefore addressed in more than one of these protocols.

The ECAMP audit consists of conducting site visits and a report. Currently, ECAMP findings are grouped into predefined root cause categories. While environmental management discrepancies can be identified, this method of identifying problem areas provides little useful information for the inspected organizations to evaluate the underlying management system. Insight into the possible management linked root causes of the findings is needed. These inspected agencies need accurate feedback that will guide them in evaluating their management systems and to correct management process problems.

The audit as conducted and analyzed is not sufficient to help prevent future findings of a similar nature. Most environmental organizations need to find the root cause of a problem because the problem "is just the tip of an iceberg" (Cade, 1994:5). To prevent a recurrence of a finding, an environmental manager must be able to identify the underlying problem or root cause as opposed to a predetermined root cause category used now. The manager needs insight into the root cause of a finding. An installation will be able to more effectively conduct its environmental management program if an analysis tool can determine an underlying root cause in relation to the finding.



## **Types of Data**

The data that are provided to an installation in an ECAMP take the form of short paragraphs in the remarks section of a checklist that relates to some environmental legislation or practice. Since each protocol has at least one assessor, there may be 13 different writing styles and perspectives for these remarks. Although there is training for the assessor, it consists of knowing the laws and regulations of the particular protocols; it does not encompass how to convey findings and thoughts as written remarks. This differentiation among individuals due to incomplete guidance leads to inconsistency in the language and content of the remarks that are written.

The common data that can be extracted from the reports fall into three categories. The first category is concerned with the checklist used and is well defined by the relevant law or regulation. The second category pertains to the root cause category assigned to each finding and has a list of identifiers such as P1, E1, T1, but the meanings of these values are not well defined. The third category of data deals with the written remarks and is affected by the writing style of the assessor. However, it is also the one category that has the most potential to extract the root cause of a finding. Some categories that are not common among the reports are the suggested corrective actions, suggested solution, management action plan, and explanation. These categories could prove useful in analyzing possible management system weaknesses; however,



since they are not common among all ECAMP reports, they will not be used in this study.

### **Significance of Research**

It is important to find the root cause of problems identified in the ECAMP findings because correcting noncompliance findings does not develop assurance that the next audit will be in compliance. And without the ability to gain insight into the environmental management systems, finding root causes is difficult. This study and analysis of findings provide a framework to gain the insight necessary to help identify root causes.

### **Scope**

This research includes data collected from fourteen Air Force installations. These fourteen installations are members of three different major commands (MAJCOMs). The MAJCOMs studied are Air Education and Training Command (AETC), Pacific Air Command (PACAF), and Air Force Material Command (AFMC). Captain Christopher M. Lindhorst collected this set of data for his thesis dated December 1997, encompassing the period from 1995 to 1997.

In addition, a second set of data from fifteen installations under AETC was also collected. This set encompasses the period from January 1998 to July 1998. This data was used to test and reinforce the framework that was developed from analysis of the first set of data.



Because the primary objective of this research is to identify any management weaknesses, only negative findings were used in the analysis. Positive findings do not provide the required information needed in this analysis to gain insight into weak areas of management, but rather illuminate areas of exemplary performance.



## **II. Background**

### **Overview**

From a hermeneutic perspective it is assumed that the researcher's presuppositions affect the gathering of the data, and the questions posed to informants largely determine what you are going to find out. The analysis affects the data and the data affect the analysis in significant ways. Therefore it is perhaps more accurate to speak of "modes of analysis" rather than "data analysis" in qualitative research. These modes of analysis are different approaches to gathering, analyzing and interpreting qualitative data. The common thread is that all qualitative modes of analysis are concerned primarily with textual analysis whether verbal or written (Vaughan, 1998).

Hermeneutics can be treated as both an underlying philosophy and a specific mode of analysis (Bleicher, 1980). As a philosophical approach to human understanding, it provides the philosophical grounding for interpretivism, a paradigm with the assumption that access to reality (given or socially constructed) is only through social constructions such as language, consciousness and shared meanings (Kaplan and Maxwell, 1994). As a mode of analysis, it suggests a way of understanding textual data. The following discussion is concerned with using hermeneutics as a specific mode of analysis.

Hermeneutics is primarily concerned with the meaning of a text or text-analogue. An example of a text-analogue is an operational organization, the



purpose of which the researcher comes to understand through oral or written texts. The basic question in hermeneutics is: what is the meaning of this text?

(Radnitzky, 1970:20). Taylor says that

Interpretation, in the sense relevant to hermeneutics, is an attempt to make clear, to make sense of an object of study. This object must, therefore, be a text, or a text-analogue, which in some way is confused, incomplete, cloudy, seemingly contradictory - in one way or another, unclear. The interpretation aims to bring to light an underlying coherence or sense. (Taylor, 1976:153)

The idea of a hermeneutic circle refers to the dialectic between the understanding of the text as a whole and the interpretation of its parts, in which descriptions are guided by anticipated explanations (Gadamer, 1976). It follows from this that we have an expectation of meaning from the context of what has gone before. The movement of understanding "is constantly from the whole to the part and back to the whole" (Gadamer, 1976:117). As Gadamer explains, "It is a circular relationship . . . . The anticipation of meaning in which the whole is envisaged becomes explicit understanding in that the parts, that are determined by the whole, themselves also determine this whole." Ricoeur suggests that "Interpretation . . . is the work of thought which consists in deciphering the hidden meaning in the apparent meaning, in unfolding the levels of meaning implied in the literal meaning" (Ricoeur, 1974:xiv).

Hermeneutical analysis is not new and started in theological studies. Flacius, around 1567 emphasized the importance of resolving ambiguities in a Biblical passage by appealing to the total Biblical context and to the particular textual context in which it stands. Wilhelm Dilthey (1833-1911) attempted to



systematize the study of human behavior. Dilthey wanted to show how the rise of Protestantism necessitated a theory of Biblical exegesis (Vaughan, 1998).

### **Hermeneutics In Practice**

The hermeneutic circle when used in practice goes from the context to the text and from the text to the context. This hermeneutical circle is outlined as framing the issue in the larger context of the organization, operation, or process. The hermeneutical circle is reading the text for evidence in support of the issue (confirming, denying, or peripheral); revisiting the issue with insight provided by reading and re-framing as necessary and re-reading the text (Vaughan, 1998).

If hermeneutic analysis is used in an ECAMP study that is looking at root causes in relation to the findings, the object of the interpretive effort becomes one of attempting to make sense of the textual findings. People (e.g. different stakeholders such as assessors, assessed personnel, and managers) can have confused, incomplete, cloudy and contradictory views on many issues. The aim of the hermeneutic analysis becomes one of trying to make sense of the whole, and the relationship between people, the ECAMP findings, and root causes.

There are a variety of levels at which hermeneutic understanding works: words as related to a sentence, a sentence as related to a paragraph or section, a paragraph or section as related to an entire work, and a work as related to other works, purpose, author, audience, or ideology. These levels set the stage for the parts as being understood in terms of the whole (Vaughan, 1998).



*Atlas.ti* is the tool used to manage the texts that hermeneutical analysis will be performed upon. This tool allows word counts to be performed on the data sets. Coding is performed in *Atlas.ti* by tagging text or attaching memos to the text. *Atlas.ti* also provides an interface to aid in the construction of a relationship model. This tool is used extensively in this study.



### **III. Methodology**

#### **Overview**

This chapter details the methodology utilized in this research. The chapter defines the problem and describes the approach and rationale used to pursue the problem. It also explains data sources used and the analysis of that data. A conceptual network is identified and proposed as an underlying structure of the data.

#### **Problem Definition**

Organizations need the ability to more effectively use environmental audit findings for the management of environmental programs. Environmental managers need to gain insight into the root causes of noncompliance so that there will be a reduced chance of repeated findings due to the same unidentifiable causes. As one measure of Air Force environmental progress, ECAMP findings can be used by management to better understand underlying root causes. This study attempts to discover whether analysis of the language of the ECAMP findings can provide insight into improved management effectiveness.



## Approach

Textual hermeneutical analysis of the findings can make it possible to glimpse underlying word meanings. This insight may enable managers to better understand the probable areas of root causes that the findings suggest.

Table 1 shows those phases that could exist for a full-scale hermeneutical analysis (Pandit, 1996). The table is not a set of instructions. The purpose of the table is to convey the rationale behind the activities employed in this study. This research extends from the data-ordering phase to the literature comparison phase.

*Atlas.ti*, a computer assisted textual analysis organizing tool, allows a more efficient means to analyze the findings. There are two modes of data analysis within *Atlas.ti*: first, the "textual level" which focuses on the raw data and includes activities such as text segmentation, coding and memo writing; and second, the "conceptual level," which focuses on framework building activities such as interrelating codes, concepts and categories to form theoretical networks. Within this general framework, data analysis for each case involved generating concepts through the process of coding, which "represents the operations by which data are broken down, conceptualized, and put back together in new ways. It is the central process by which theories are built from data" (Strauss and Corbin, 1990:57).



**Table 1. Textual Analysis Flow** (adapted from Pandit, 1996)

|                                    | PHASE  | ACTIVITY   | RATIONALE  |
|------------------------------------|--|--|--|
| <b>RESEARCH DESIGN PHASE</b>       |  |  |  |
| Step 1                             | Review of technical literature                 | Definition of research question<br>Definition of a priori constructs   | Focuses efforts<br>Constrains irrelevant variation and sharpens external validity  |
| Step 2                             | Selecting cases                                | Theoretical, not random, sampling  | Focuses efforts on theoretically useful cases (e.g., those that test and/or extend theory)   |
| <b>DATA COLLECTION PHASE</b>       |  |  |  |
| Step 3                             | Develop rigorous data collection protocol      | Create case study database<br><br>Employ multiple data collection methods<br><br>Qualitative and quantitative data | Increases reliability, Increases construct validity<br>Strengthens grounding of theory by triangulation of evidence, enhances internal validity<br>Synergistic view of evidence                                      |
| Step 4                             | Entering the field                             | Overlap data collection and analysis<br>Flexible and opportunistic data collection methods                         | Speeds analysis and reveals helpful adjustments to data collection<br>Allows investigators to take advantage of emergent themes and unique case features   |
| <b>DATA ORDERING PHASE</b>         |  |  |  |
| Step 5                             | Data ordering                                  | Organize data into units   | Facilitates easier data analysis, allows examination of processes  |
| <b>DATA ANALYSIS PHASE</b>         |  |  |  |
| Step 6                             | Analyzing data relating to the first case      | Use open coding<br><br>Use axial coding<br><br>Use selective coding  | Develop concepts, categories and properties<br>Develop connections between a category and its sub-categories<br>Integrate categories to build theoretical framework<br>All forms of coding enhance internal validity |
| Step 7                             | Theoretical sampling                           | Literal and theoretical replication across cases (go to step 2 until theoretical saturation)                       | Confirms, extends, and sharpens theoretical framework  |
| Step 8                             | Reaching closure                               | Theoretical saturation when possible   | Ends process when marginal improvement becomes small   |
| <b>LITERATURE COMPARISON PHASE</b> |  |  |  |
| Step 9                             | Compare emergent theory with extant literature | Comparisons with conflicting frameworks<br>Comparisons with similar frameworks                                     | Improves construct definitions, and therefore internal validity<br>Also improves external validity by establishing the domain to which the study's findings can be generalized                                       |



There are three analytical types of coding: open coding, axial coding, and selective coding. It does not necessarily follow that the researcher moves from open through axial to selective coding in a strict, consecutive manner. Open coding refers to that part of analysis that deals with the labeling and categorizing of phenomena as indicated by the data. The products of labeling and categorizing are concepts, the basic building blocks in grounded theory construction. Open coding requires application of what is referred to as "the comparative method," that is, asking questions and making comparisons. Data are initially evaluated by asking simple questions such as what, where, how, when, and how much? Subsequently, data are compared and similar incidents are grouped together and given the same conceptual label. The process of grouping concepts at a higher, more abstract, level is termed categorizing. Whereas open coding fractures the data into concepts and categories, axial coding puts those data back together in new ways by making connections between a category and its sub-categories (not between discrete categories which is done in selective coding). Thus, axial coding refers to the process of developing main categories and their sub-categories. Selective coding involves the integration of the categories that have been developed to form the initial theoretical framework (Strauss and Corbin, 1990).

To add to this list of theory-building are memos (units of coding). At least three types of memo may be distinguished: code memos, theoretical memos and operational memos. Code memos relate to open coding and thus focus on



conceptual labeling. Theoretical memos relate to axial and selective coding and thus focus on paradigm features and indications of process. Finally, operational memos contain directions relating to the evolving research design (Strauss and Corbin, 1990).

### **Rationale Employed**

Cases (the principal unit of data in this research, as each data set represents a case) should be selected according to the principle of theoretical sampling, which is defined as "The process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges" (Glaser and Strauss, 1967:45).

Accordingly a qualitative investigation requires a different approach, "Unlike the sampling done in quantitative investigations, theoretical sampling cannot be planned before embarking on a grounded theory study. The specific sampling decisions evolve during the research process itself" (Strauss and Corbin, 1990:92).

During initial data collection, when the main categories are emerging, a full "deep" coverage of the data is necessary. Subsequently, theoretical sampling requires collecting data only in categories, for the development of properties and propositions. The criterion for judging when to stop theoretical sampling is the category's or theory's "theoretical saturation." By this term, Glaser and Strauss refer to the situation in which



no additional data are being found whereby the (researcher) can develop properties of the category. As he sees similar instances over and over again, the researcher becomes empirically confident that a category is saturated. When one category is saturated, nothing remains but to go on to new groups for data on other categories, and attempt to saturate these categories also. (Glaser and Strauss, 1967:65)

Not all categories are equally relevant, and accordingly the depth of inquiry into each one should not necessarily be the same. As a general rule, core categories, those with the greatest explanatory power, should be saturated as completely as possible. A theory is saturated when it is stable in the face of new data and rich in detail (Glaser and Strauss, 1967).

Theoretical sampling translates in practical terms into two sampling events. An initial case is selected and, on the basis of the data analysis pertaining to that case and hence the emerging theory, additional cases are selected to extend or test that theory.

Textual analysis requires codifying on a specified unit of data. It is neither feasible nor rational to codify per word since many words are usually needed to extract the meaning from the thought behind the word. A paragraph can be too large because it may contain several intended thoughts for the reader in its structure. A sentence may not be the correct unit because it may not contain enough information to extract the intended conveyance or meaning of the writer. Therefore, the unit of analysis can be established, with a reasonable degree of confidence, as the thread of thought intended by the assessor. This thread will usually be no less than a sentence and no more than a paragraph. When looking



at an individual thread of thought in each finding, it can be codified as a relation to a root cause. These threads are associated to the root causes with differing degrees of confidence according to the depth of facts presented in the findings. Since each coding has a specific definition and each thread of thought that is trying to convey a root cause is coded, each specific definition is correlated to a root cause. The depth of the facts presented by the specific definition therefore determines the specificity of the codification.

### **Data Sources**

The data for the first case, the data summarized in Appendix A, were collected from fourteen Air Force installations. These fourteen installations are members of three different major commands (MAJCOMs): Air Education and Training Command (AETC), Pacific Air Command (PACAF), and Air Force Material Command (AFMC). This set of data was originally collected for a 1997 AFIT thesis (Lindhorst, 1997) and encompasses the period from 1995 to 1997. The data for the second case, Appendix B, were collected from fifteen ECAMPs in 7 months in AETC. The actual names of individual installations included in the analysis are not used to maintain their anonymity.

This research utilizes ECAMP finding remarks as the data. This category has the most potential for insight into organizational management systems because it is derived from an experienced individual who is assigned outside the immediate organizational structure. The assumption is that if an individual in



the audited organization knew what was wrong with the management system, the problem would not become a finding. Therefore an objective and unbiased observation from someone outside the organization should provide a better insight into the root cause. The outside assessor conveys this observation in a written finding. However, the information extracted depends on how detailed the finding is and on the astuteness of the assessor. If the relevant particulars are abundant and the assessor has keen judgment, then the underlying causes can be extracted from the findings with a high degree of certainty.

### **Data Analysis**

There are several ways to approach the analysis of the ECAMP data. The data could be analyzed by traditional grounded theory methods (Glaser, 1967). The grounded theory approach consists of five analytic (and not strictly sequential) phases of grounded theory, identified as research design, data collection, data ordering, data analysis, and literature comparison. There could be some type of statistical analysis of the data, which could determine a correlation between the findings and some factor such as root causes. Also, a qualitative framework could be derived to analyze the data and extract any meaning that the reorganized data may provide. This framework could be in the form of a table or more advanced analytical structure. There could also be a combination of any of these approaches and several more others. However, due to the large amount of data and the fact that written words are part of the data, a



qualitative computer-assisted textual analysis of the ECAMP findings remarks is appropriate (Kelle, 1995).

A statistical approach that tries to correlate findings to root causes assumes there is no more than one root cause to a finding. This is evident when the findings and the number of them that are related to a root cause are used interchangeably with some measure of their abundance. A qualitative framework that is not intrinsically derived from the data presupposes relationships and categories. A hermeneutical approach develops relationships among the concepts that are based in data. This hermeneutical analysis assumes no direct relationship between root causes and findings. Those relationships are discovered in the development of the coding and relative framework. Because these assumptions are not made the hermeneutical approach is a good tool to use for investigating findings and their relationship to root causes. Computer-aided analysis expedites tedious database management. Employing computer-aided hermeneutical analysis allows research of the ECAMP findings.

The data are synthesized as units and codes relating to their meaning are formed. One mental helper in forming codes is to do a word search and use the frequency of a word as a mental trigger for coding. In using a word search of the data, the most frequent nouns or derivations of the nouns are used to code the database so that it will help code each thread of thought, the units of analysis (first step of open coding). Each thread is examined and preliminary codes are associated with the words in each thread. Any preliminary codes assigned



through the word search help focus on the thread of thought conveyed. This thread is given a code consisting of one word to describe the thought. This word is then assigned a definition (code memo) to describe the intent of the code and explain its meaning. Once the entire data set has been coded, it is scanned until all like definitional codes are merged into a satisfactorily defined code. Then the codes themselves are explored for any relationships that may exist between one another (axial coding). These relationships are then outlined and explored (selective coding). This results in a theoretical framework with which to view the data.

Another consideration is that the data must be collected with a uniform procedure and intent. The context of this retrieval is crucial when trying to determine the meaning of the data. The data must have the intent of conveying a message from the writer to the reader. An ample amount of data from several individual assessors under the same rules of engagement is best for the collection of data, since it reduces the bias of the assessor on the perceived versus actual events that are conveyed.

### **Content and Form of Results**

The forms of the results can take many shapes, matrixes, webs, geometric shapes, and hierarchical trees. All results are based on the codes and their relationships. In this study, each code is defined and has a correlation to a root cause. The association between code and root cause is determined by the



definition of the code in respect to root causes and the actual findings. Each type of relationship between codes is defined and relates to the interaction between root causes.



## **IV. Results**

### **Overview**

This chapter presents the results of analysis of the first case study and discerns the formal definitions. The formation of theory is first presented; then, the second case study results are detailed. The framework derived from the first case study is tested in the second case study and the results are analyzed.

### **First Data Set**

A word frequency count of the first data set was conducted. The 12 most frequently used words related to environmental management and related words were:

1. Waste
2. Personnel
3. Hazardous
4. Plan – Planned – Plans - Planning
5. Requirements – Required – Requirement
6. Materials – Material
7. Storage – Stored – Store
8. Management - Manage



9. Aware - Unaware

10. Training - Train

11. Procedures - Procedure

12. Maintenance – Maintain – Maintains - Maintaining

These keywords were used to codify the entire data set and form a preliminary set of codes. A first pass was made through the data set and each thread was codified with a word and its definition that related the thread to a root cause. As a result, 421 threads had been codified after this initial pass, multiple passes were made to group similar instances together. This comparison of similarities and differences resulted in eleven seemingly independent categories: Lack of Human Resource, Lack of Material Resource, Lack of Financial Resource, Lack of Time Resource, Lack of Unidentifiable Resource, Lack of Written Notification, Lack of Personnel Training, Lack of Direction, Lack of Communication, Lack of Procedures, and Miscellaneous. Definitions for each of these codes had not been formally constructed. Formal construction consists of a written definition and verification that each coding unit (thread of thought) belongs to that definition. The definitions existed as outlines and each coding unit analyzed was compared to the first units of each code to verify similarities.

### **Formal Definitions**

When formal definitions were made, several questions arose. The specific difference between findings, the specific similarity between findings, and the



relationship of root causes to the findings were the questions that needed to be answered. After more analysis considering these questions, the result was ten formally defined codes. The definitions are derived from the analysis of the findings to encompass the contextual meaning of those findings that are assigned the respective code. The definitions derived for this research are described below with the understanding that "lack of" precedes each definition. A miscellaneous code was formed to codify all other threads:

1. Communication – Exchange of information
2. Documentation – Archival communication as presented in signage, procedures, or recorded changes.
3. Notification – One-way communication (no need for feedback loop) laterally or up the organization
4. Guidance – One-way communication down the organization
5. Coordination – Two-way communication (feedback loop) between functions
6. Training – Proficiency by means of learning
7. Resource – Something that can be drawn upon for support
8. Human – Manpower or time (easily interchangeable and therefore not distinguishable) to accomplish functions
9. Material – Material, equipment, or technology to accomplish functions
10. Financial – Money to accomplish functions



### Connections between categories and sub-categories

Through several iterations of comparisons, axial coding became the predominant analysis focus because the categories were established with a high degree of confidence by saturation of analysis. An example of saturation is the five findings for the notification category found in the second case study. The findings are the only findings that fit the definition of the notification category with an acceptable degree of confidence and do not fit into another category with as high a degree of confidence.

Quarterly reports of pesticide use on base should be generated and submitted to MAJCOM and the Randolph AFB BEE. However, due to computer problems, these reports are not consistently being generated and MAJCOM and the Randolph AFB BEE are not being notified. However, the information to generate these reports is being tracked and is readily available.

The medical waste incinerator has been removed. Since the incinerator was permitted, TNRCC should be notified of its removal. Such notification will document the actual date of closure and will assist the base in verifying compliance with state permits.

All gasoline tank trucks at major emission sources in Pulaski County are required by state regulation to be pressure tested. Although the MOGAS C-300 used by Base Fuels is pressure tested on an annual basis, it does not appear that the notifications to ADPCE, which are required before and after the test, have been made. These requirements are detailed in the Documentation section of the ADPCE report "Pressure-Vacuum Test Procedure for Leak-Tightness of Gasoline Trucks."

According to 40 CFR 63 Subpart T (Solvent Cleaning NESHAP), solvent cleaning machines must meet specified requirements. Facilities subject to this regulation are required to submit one or more reports including an initial notification report and a compliance report. The base has not notified EPA of the presence of an immersion cold cleaning machine at the Lawnmower Shop. The cold cleaning machine uses a solvent that is 50-55 percent methylene chloride by weight.



Federal regulation (40 CFR 61.145) requires notification of the intent to demolish or renovate structures containing regulated asbestos-containing materials. This notification must be received by Maricopa County at least 10 days before the start of demolition or removal. Two notification forms, of four reviewed, were submitted less than 10 days before the projected start date of the abatement.

An intrinsic order of two separate groups emerged: tangible problems and human interaction problems. The tangible problems were resource generally, and more specifically human, material, and financial. The human-interaction problems were communication generally, and more specifically documentation, notification, guidance, coordination, and training. The interrelationships of dependence and independence became clear by comparing and contrasting the definitional codes of these emergent groups.

### **Tangible problems**

In the tangible problems group, it was easy to see that all threads under the codes of financial, human, and material could have been coded as resource. Some examples from each of these groups in the second case study are:

Codes: [Financial] The loading/unloading facility at the JP8 storage tanks does not have secondary spill containment. A project has been designed and submitted for Defense Fuel Supply Center funding.

Codes: [Human] Although the environmental flight staff appear competent, capable, knowledgeable, and motivated, they are impeded by insufficient manpower to the extent that the program has suffered. Action is underway to fill the IRP manager position, but the vacant Captain slot should be filled or converted to civilian to bring manning up to 100%. Another critical problem is the absence of reliable and capable administrative support. Currently, a vacant GS-4 temporary position exists, but recruitment of a qualified clerical worker has been unsuccessful due to the temporary status of



the position. This problem is manifested in many ways. For example, official files documenting the membership, actions, charters, and decisions of the EPC and its four subcommittees are not properly maintained in the Environmental Flight.

Codes: [Material] A manometer is used to measure pressure drop across filters in paint booths. An increase in pressure indicates that the filters are becoming plugged and are not efficiently removing particulate matter. Beyond visual observation of the filters, the manometer is the only way to determine if the filters are becoming plugged. Apparently, the manometer was recently broken and needs to be replaced. There are no current regulations requiring a manometer.

These threads would belong to the code resource with a higher degree of confidence than the more specific code that they were given. Assessors are able to identify tangible problems better due to the specific nature of those problems. This natural specificity allows assessors to convey their findings in a more detailed manner. None of the threads in the resource code could be coded in any of the other more specific tangible problem codes. This situation of not being able to group findings in a more specific problem was attributed to the lack of required information to code them as one of the more specific codes. An example of this is:

The exhaust hood in Bldg 387 does not provide the proper air velocity of 150 linear feet per minute at the face of the hood. This may present a potential health hazard to individuals mixing the pesticides. Bioenvironmental Engineering has tested the venting system and determined that it was not meeting the specifications established in military handbook 1028/8A, Design of Pest Management Facilities.

It could be financially related but the assessor does not talk about an unfunded project. It could be material related but there is no suggestion that a



newer exhaust hood would provide a better flow rate. It probably is not human related unless the flow rate could be increased with more manpower or the need for a higher flow rate could be alleviated with more manpower. This relationship between findings led to a hierarchical order of the resource code above the codes of human, material, and financial.

### **Human-interaction problems**

In the human-interaction problems group, it was evident that all threads under the codes of coordination, documentation, guidance, notification, and training could have been coded as communication. Some examples from each of these groups in the second case study are:

Codes: [Coordination]      Procedures for annual leak tests of the JP8 bulk fuel tanks were developed; however, they were not coordinated with the BCE to ensure all Federal, State, and local requirements are met.

Codes: [Documentation]      Base Exchange service station properly manifested used tires but did not maintain a log showing date, number of tires, and method of transportation.

Codes: [Guidance]      The Base is required to have an appointed program manager for the back-flow prevention program. This person is normally in the utilities maintenance section. No document from BCE making this designation can be found.

Codes: [Notification]      The medical waste incinerator has been removed. Since the incinerator was permitted, TNRCC should be notified of its removal. Such notification will document the actual date of closure and will assist the base in verifying compliance with state permits.

Codes: [Training]      Oklahoma Department of Environmental Quality (DEQ) requires personnel involved in inspections, risk assessments and



screening analysis in target housing to be state certified. Bioenvironmental Engineering personnel perform screening sampling in target housing by request. They are trained and knowledgeable on all requests of LBP; however, their training does not meet DEQ certification requirements.

The definition of the communication code covers all the findings in these codes. If the threads in documentation, notification, guidance, coordination, and training would have been coded as communication, they could have been coded with a higher degree of confidence than the code that they were given. All of the threads in the communication code could not be coded in any of the other more specific human-interaction problem codes. An example of this situation is:

Diesel fuel filters are being managed as hazardous waste based on an assumption that they contain benzene. These filters are not likely to be hazardous as diesel typically does not contain benzene. A hazardous waste characterization should be accomplished with the goal of removing these filters from the hazardous waste stream inventory.

The assessor does not specify if this is a coordination problem between organizations. The assessor also fails to convey whether the stream has been characterized but not documented. The assessor makes no implication that guidance is lacking. Notification would be unsuccessful in solving the problem. And the assessor fails to state or imply a lack of training as the problem. This inability to reclassify threads was attributed to the lack of required information to code them as more specific codes. This relationship between findings led to a hierarchical order of the communication code above the codes of documentation, notification, guidance, coordination, and training.



### Selective Coding

Knowing all of these threads are related to compliance, it is logical to assume that resource and communication relate to compliance, and that they relate to one another in some fashion. Compliance is at the top of the hierarchical chain, because compliance is the focus of the textual analysis. Neither resource nor communication is directly related to compliance because their definitions do not relate directly to compliance, also resource and communication do not relate directly to each other (refer to definitions given in Chapter IV). Therefore another code category must be present linking them since it is known that the categories are related in some way. Several threads definitely were compliance-related but were originally coded as miscellaneous or were coded with a lower degree of confidence than desired as resource or communication. An example is:

Spent glass bead blast media is leaking from the equipment during operation. The material was found accumulating in a small pile on the ground, as well as coating the equipment exterior with a fine dust. This material is a hazardous waste, and must be handled and contained in the appropriate manner.

It could be a resource problem lacking the appropriate attachment to the equipment or it could be a communication problem in improper training. However not enough information is supplied by the assessor to make a determination. These threads were tagged and analyzed to determine their relationship to compliance. After intense comparison analysis the commonality among these threads was determined as a lack of performance since each thread



could fit the definition of performance. Analyzing the similarity between these threads resulted in the performance category. It is possible that these threads could have been grouped with communication and one of its subordinates or with resource and one of its subordinates. However, the interpretation would have been made with a very low degree of confidence due to the lack of information to determine the assessors' meaning. In these threads the assessor usually did not make a detailed statement of the finding or the assessor lacked insight into the actual problem. Forming the performance code for these threads allowed a connection between both the communication and resource code to compliance (Figure 1). This new category's formal definition is: Performance – Fulfilling requirements.

Figure 1 and Figure 2 have two numbers in the format of (#-#) after the category codes. The first number represents the number of findings categorized in that code. The second number represents the number of category codes that are related to that category. Higher numbers in the first position are not correlated with a stronger indication that the category is a higher cause than another category. The higher number indicates that more findings are found with these characteristics. The second number is a better indicator of how well based the category is in the data and gives an indication of the complexity of that category.



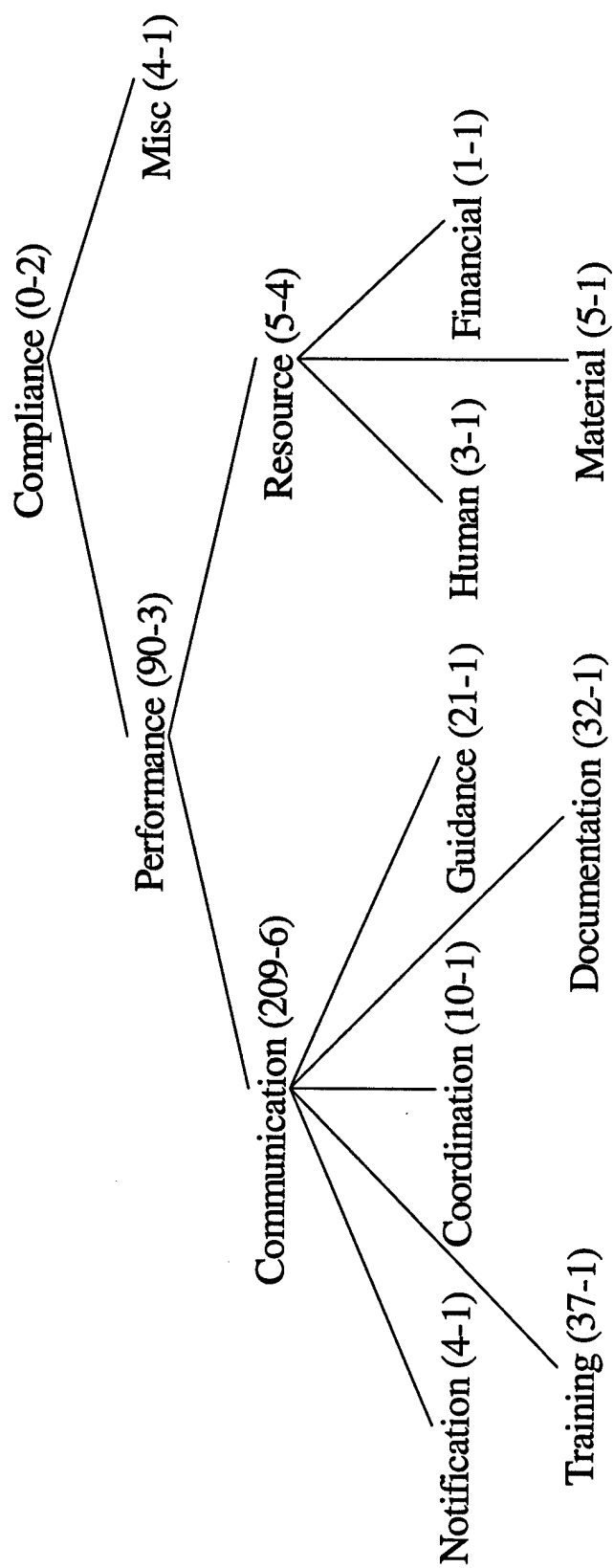


Figure 1. Theoretical Framework for Case Study 1



## **Second Data Set**

Figure 1 represents a formal theoretical structure of the data. A second set of data that had better control over collection technique was analyzed to test validity and reproducibility. Since the data were collected from one MAJCOM, the policies pertaining to the collection were consistent. The first data set was derived from input from three MAJCOMs and therefore had several collection policies, resulting in a wider variance of expression. If the theorized structure that was based on the first data is valid, then it should encompass the data in this more consistently collected set. Several passes through the data set were made producing 356 threads of thought (Figure 2). Each thread was coded verifying that the thread met the definition of the code. Special attention was made to ensure that new categories were possible and not to focus solely on the codes that had been formed in the theorized structure.

## **Refinement**

No new codes were found; however, it became increasingly evident that the existing codes formed more than a hierarchical structure. An example is:

Nesting pairs of burrowing owls were disturbed and owls were flushed from abandoned prairie dog burrows by mowing equipment. The burrowing owl is a federal Candidate species and is protected by the State under the Migratory Bird Treaty Act. Currently, there is no base-wide raptor survey or management plan to prevent this type of occurrence.



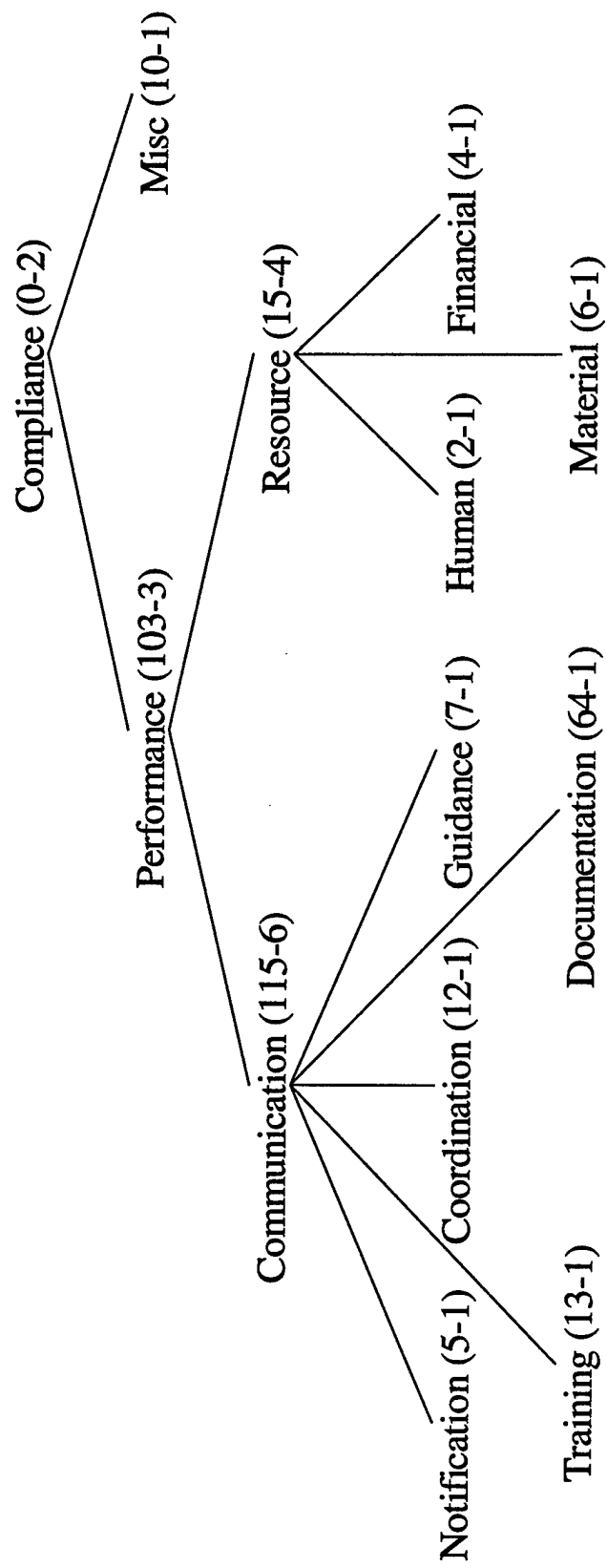


Figure 2. Theoretical framework Case Study 2



This finding was categorized as guidance although it may have a relationship with financial since it is possible the surveys are not completed due to a lack of funds. It had already been established that moving a thread up the structure increased the confidence of place location. Figure 3 illustrates confidence level and bias interaction. Some threads could possibly belong to more than one code, on the same level, with differing degrees of confidence. The assumption had been to codify the thread with the most confidence and still be coded specifically as possible. Since an inter-relation existed among codes on the same level, such as:

Although the operator understood that records are required, he did not understand the purpose of the records or what they needed to include.

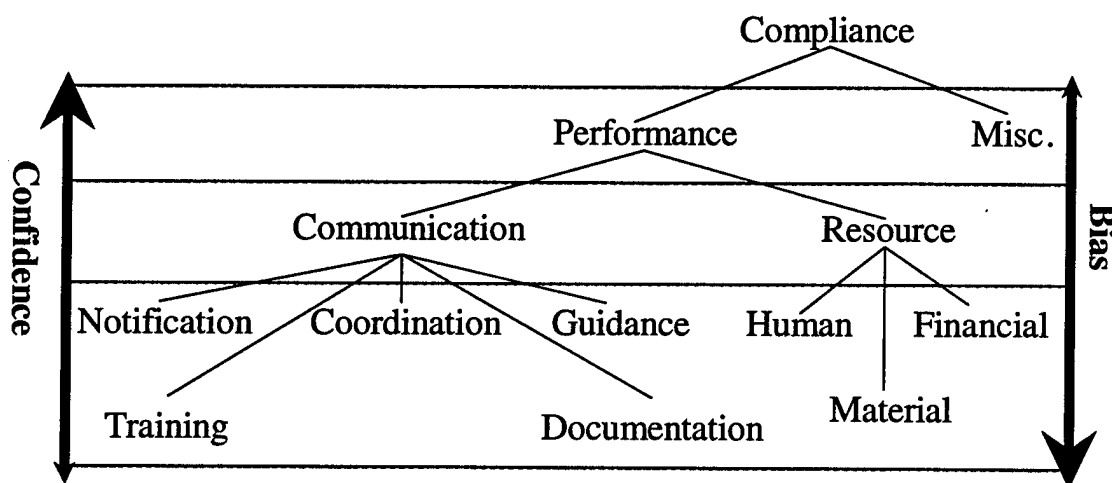


Figure 3. Bias and Uncertainty Influences in Theoretical Framework



This thread was categorized as training but could have been categorized as guidance; the thread was codified where it had the most confidence among other viable codes. Because this interrelation among like-level codes shows as a factor of confidence in placement it is also possible that the thread belongs in both codes.

This inter-relation not only exists between codes in the same lineage, but also between codes in different lineages. If the inter-relationship existed only between different lineages, some type of matrix interaction of the most specific codes would have been suggested. The complexities of these inter-relationships suggest something more involved. An example is:

Nesting pairs of burrowing owls were disturbed and owls were flushed from abandoned prairie dog burrows by mowing equipment. The burrowing owl is a federal Candidate species and is protected by the State under the Migratory Bird Treaty Act. Currently, there is no base-wide raptor survey or management plan to prevent this type of occurrence.

As previously stated, this thread was codified as guidance but could have belonged to the financial coding. If this interaction was the only type of relationship that existed, communication and resource codes would be in a matrixed relationship. However, as shown earlier with the thread that exhibited both the training and guidance codes (both in the communication code), the matrix would not be an appropriate structure.



### Emergent theory

To understand the interaction of the relationships between codes, the underlying assumptions must be analyzed. One assumption is that there is one underlying cause that has generated any particular finding. It is also assumed these causes have a direct one-to-one relationship with the external problems that surface. This assumption of direct relationship works well for simple problems. These types of problems are usually on the outside of the onion as referred to in the "onion-skin approach to problem diagnosis" (Kent, 1986:6). However, the more complex problems probably have been generated by a combination of root causes. And even this idea of combined root causes is assuming root causes in and of themselves are singular concepts. The findings show characteristics of possibly belonging to more than one code. These characteristics had varying degrees of confidence dependent upon the specificity of the finding. The characteristics of the inter-relationships among the low-level codes, especially between the tangible and human-interaction codes, are indications that some root causes are not singular in nature and have a duality when perceived as a problem. In simpler terms, the actual cause is manifested as part of a problem that is dichotomous and is related to another actual cause. This relationship would suggest that fixing only one cause would not solve the problem. Solving the problem would require fixing both causes. An example is an individual who responsible for a hazardous waste collection point that does not include all the proper equipment. The finding is documented as a lack of



funding (financial) to properly maintain the collection point. The person may lack funding or the ability to forecast for the funding to buy the proper materials; however, the person may also lack training to properly maintain the hazardous waste collection point.

Another characteristic that the code presents is the relationships between findings that indicate that they may belong to the same cause. The codes exhibit a relationship that the "actual" cause is manifested as more than one "type" of problem. An example would be an individual responsible for the labeling of barrels. If that person could not forecast when to purchase labels, the problem might manifest itself as both a lack of financial resources (when someone finally notices labels are out of stock there is no more money to buy them) and/or a lack of documentation (procedures to keep label in stock).



## V. Discussion

### Overview

This chapter discusses the results of the study. First, the weaknesses of the data are reviewed. Next, the questions that arose during the formation of the definitions of the codes are analyzed. Suggested actions are proposed. Finally, areas of further research are introduced.

### Data Weakness

The first data set (or case) exhibited not only a variance in different writing styles from different assessors, but also variance related to the context upon which the data was collected. Each MAJCOM follows separate policies in its procedures for assessors who write findings. This contributes to a contextual difference. ACC uses "boiler plate" templates for the assessors to record findings and assign root cause codes. AFMC assessors do not have "boiler plates" templates for the findings but "free form" the write-ups, then send the findings back to the installation for the personnel there to assign the root cause code. AETC assessors not only write the findings and assign the root cause code, they write an explanation and suggested solution as well as. These different contexts could skew the extracted meaning of the threads. However, the most common weakness in the findings was that the assessor did not provide enough information to classify the threads with any level of confidence. An example is:



The sink furnished in the mixing room at Bldg 387 does not have a continuous draining counter area. The current counter top is just Formica with no containment or splashboards.

This finding can not even be categorized into the performance definition due to lack of information. This weakness is shown in the miscellaneous coding. Most threads in the miscellaneous coding lacked sufficient detail to classify them in any category.

### **Formation of Code Definitions Discussed**

When the definitions were formed for the codes, several questions arose regarding differentiation among categories. The original categories (Lack of Human Resource, Lack of Material Resource, Lack of Financial Resource, Lack of Time Resource, Lack of Unidentifiable Resource, Lack of Written Notification, Lack of Personnel Training, Lack of Direction, Lack of Communication, Lack of Procedures, and Miscellaneous) showed some overlap or possible miscommunication of meaning. Some of the questions were:

*How does one differentiate between a time resource and a human resource?*

*What is the difference between a written notification and procedures?*

*How are a lack of direction and a lack of communication different?*

*Does lack of training relate to a lack of motivation?*

The differentiation between a time resource and a human resource was examined. It was reasoned that there is no difference between a time resource



and a human resource if constraints are not present. Resources could be exchanged with the other with little regard for differentiation. Therefore, one code was defined to encompass both of these aspects. If lack of time or lack of manpower is related to a root cause, the solution would be the same in either case.

What is the difference between a written notification and procedures? Originally, written notification encompassed insufficient labeling, bad signage, or poor documentation. Procedures encompassed lack of proper signature or not having a plan to guide execution. All of these attributes except for proper signature dealt with some type of archival communication problem. These threads, except for certain signature related threads, were therefore reorganized under the documentation coding. The signature component that is referred to deals with a type of communication that generally is not found in the other archival forms; a signature relays a two-way communication.

How are a lack of direction and a lack of communication different? It seems reasonable that with a lack of communication there is a lack of direction. In fact, after redefining procedures and written notification, a new category emerged, labeled two-way communication. This is simply a more specific type of communication. Therefore, it was reasoned that direction is a type of communication that could best be described as guidance. The original communication category encompassed other two-way communication types and one-way communication types. Eventually, this category was developed into



two categories: coordination and notification. The communication category remained but was given a broad definition to cover those threads that were obviously communication related but lacked sufficient detail to categorize them any further.

Does lack of training relate to a lack of motivation? Training does not provide motivation, but the lack of proper training can be perceived as a lack of motivation. The data were collected from individuals outside the organization and reported through their perceptions. Therefore, anything that the assessors recorded in their threads that seemed to be a result of a lack of motivation and could be related to training was assumed to be training related. If an assessor related that he witnessed several people leaving the lid open on the oil drain barrel at the auto hobby shop although signs were posted for it to be closed, the problem could be perceived as a lack of motivation. However, the incidents could be from lack of training given to the auto hobbyists who may not understand the importance of why the lid must be closed. If lack of motivation had been used as a category, its definition would not be able to accurately define an appropriate rule based code. This ambiguity is a result of how highly subjective the perception of motivation is. Only the individual that is thought to be unmotivated knows if motivation is the factor. The codes and their definitions that were derived are to be as objective as possible and motivation does not fit into that model.



### **Suggested Actions**

Looking at the model (Figures 1 and 2), it seems that most threads deal with the performance problems that are not resource-related. The idea of having few resource-related problems follows conventional management system wisdom. It is easier to identify and fix resource problems than it is to identify and fix communication problems since resource related problems are more tangible. Also, the numbers in the figures show that most threads cannot be categorized into the bottom layers of the structure. This means that either the assessors do not have the training to convey their insight into the problem or that the assessors do not have the capability of insight.

As of the time of this study, assessors are not routinely given instructions on how to write findings, although guidance and examples are available on how to accomplish report writing (Cahill, 1989). When commanders write officer performance reports or enlisted performance reports, most have an unofficial guidance book that outlines effective ways of communication. These guidance books talk about stating the action, reporting the results, and identifying the impact. These books also give keywords that help convey the idea that is trying to be conveyed. There are usually several example reports that are given both well written and badly written to help demonstrate effective communication. This type of training would provide assessors a richer set of data to be analyzed and would probably lead to a better understanding of the problems.



Figures 1 and 2 suggest that the weaknesses in the AF environmental management system are generally related to root causes that deal with communication problems. An organization's incentive is to present information to the assessor so that resource related problems are documented. This documentation helps the organization that is audited to show the lack of resources to the appropriate levels of management and therefore the organization can justify an increase in the resources. The results show that more codes are needed to portray communication problems and this more diversified and numerically larger group of related codes suggests that this problem area is the hardest for the assessors to evaluate. It is not a mere coincidence that communication is also part of the problem in relating ECAMP results from the assessors to the managers.

This thesis provides a methodology and framework to help identify weaknesses in the existing environmental management system. As a result it has suggested that communication-related root causes are the largest type of problem environmental management organizations face. This methodology and framework has also exposed the shortcomings of not providing assessors the necessary training to conduct better reports that installation managers can better use.



### Areas of Further Research

An analysis of the types of information that might be written for the findings to better communicate issues could be accomplished. This analysis could lead to a guidebook for assessors or a training course for assessors. Further case studies on the written evaluation of internal audits could also be performed. These studies would either invalidate this framework or help enrich the insight that needs to be gained. A verbal discourse analysis could be performed with the assessors to alleviate the problem of insufficient information. This type of study would allow researchers to be more accurate in their interpretation of the findings. There are many possibilities for further research. This thesis is a starting point in a qualitative assessment of the AF Environmental Compliance Assessment Program.

This study is a worthwhile effort to show what a hermeneutical analysis can provide. However, this study does not help environmental managers that are in the "field." To make this study more applicable to field managers I feel three key areas must be addressed. The EMS structure needs to be audited and the data analyzed to determine weaknesses existing in the EMS. The analysis (possibly a hermeneutical analysis) must identify and define these weaknesses as directly relating to root causes. The second key concern is reliability of the data provided from the ECAMPs. The ECAMP data must convey in a uniform but sufficiently detailed manner the noncompliance problems. If the root causes in the EMS are identified and there is sufficiently detailed data from an ECAMP,



then a higher level hermeneutical analysis can tie together the relationship between EMS root causes and the ECAMP root cause category codes presented in this study. This relationship would allow managers to work on the most likely root causes in the EMS from data gathered in ECAMPs.



## Appendix A: Case Study One

Code: Communication {209-6}

P 1: APPENDD2.txt - 1:1108 (68:69) (Super)  
Codes: [Communication]

There is no comprehensive Natural Resource database, nor is GIS used in comprehensive planning

P 1: APPENDD2.txt - 1:1240 (112:112) (Super)  
Codes: [Communication]

Personnel were not aware of the AFI requirement

P 1: APPENDD2.txt - 1:1241 (116:116) (Super)  
Codes: [Communication]

Unaware of proper manifest requirements. Copy of requirements provided to personnel

P 1: APPENDD2.txt - 1:1243 (118:119) (Super)  
Codes: [Communication]

The shop foreman and air program manager were unaware of these requirements. In fact, the lid had been pinned open with a "fire safety" pin

P 1: APPENDD2.txt - 1:1244 (121:121) (Super)  
Codes: [Communication]

Base personnel were not aware that they are required to submit an AEI

P 1: APPENDD2.txt - 1:1245 (123:123) (Super)  
Codes: [Communication]

Invoices were being maintained for one year. Not aware of three year requirement

P 1: APPENDD2.txt - 1:1247 (128:128) (Super)  
Codes: [Communication]



Personnel were not aware of the required contents of Solid Waste Management Plan

P 1: APPENDD2.txt - 1:1250 (137:138) (Super)  
Codes: [Communication]

The Asbestos Program Manager was not aware of the requirements for the Asbestos Operating Plan

P 1: APPENDD2.txt - 1:1268 (186:186) (Super)  
Codes: [Communication]

Personnel were unaware of requirement

P 1: APPENDD2.txt - 1:1269 (188:188) (Super)  
Codes: [Communication]

Auto Skills Development Center personnel were not aware that fuel filters are hazardous waste

P 1: APPENDD2.txt - 1:1270 (191:191) (Super)  
Codes: [Communication]

Operators were not aware of the requirements

P 1: APPENDD2.txt - 1:1271 (193:195) (Super)  
Codes: [Communication]

Designated Pest Management Coordinator, was not aware he had to be DoD-certified to ensure pesticides are properly used on the base and to comply with DoD and Air Force regulations, directives and guidance

P 1: APPENDD2.txt - 1:1272 (197:198) (Super)  
Codes: [Communication]

Personnel were unaware that all containers of hazardous materials must have hazard warning labels

P 1: APPENDD2.txt - 1:1273 (200:200) (Super)  
Codes: [Communication]



Personnel were unaware of the requirement to register equipment with EPA

P 1: APPENDD2.txt - 1:1275 (204:204) (Super)

Codes: [Communication]

Personnel were not aware of the significance of the requirement

P 1: APPENDD2.txt - 1:1276 (206:207) (Super)

Codes: [Communication]

Store personnel were unaware of storage requirements. Personnel did move weed and feed back into the building during the ECAMP evaluation

P 1: APPENDD2.txt - 1:1277 (209:210) (Super)

Codes: [Communication]

Personnel were not aware of the requirement to keep cylinders securely anchored nor to keep flammable gases at least 20 ft from oxidizers

P 1: APPENDD2.txt - 1:1278 (212:212) (Super)

Codes: [Communication]

Unaware of records and waste disposal processes

P 1: APPENDD2.txt - 1:1279 (214:214) (Super)

Codes: [Communication]

Water systems personnel were not aware of a sign requirement

P 1: APPENDD2.txt - 1:1280 (216:217) (Super)

Codes: [Communication]

Personnel were unaware that all containers of hazardous materials must have hazard warning labels

P 1: APPENDD2.txt - 1:1281 (219:222) (Super)

Codes: [Communication]

DRMO personnel were not aware of the base has researched the issues related to the Clean Water Act that are associated with this discharge, but has not yet



reviewed potential impacts associated with RCRA. requirement to submit LDR certification forms with each off-site shipment of spent lead-acid batteries destined for recycling

P 1: APPENDD2.txt - 1:1282 (224:225) (Super)  
Codes: [Communication]

Personnel were not aware that use of solvents for wipe-down operations is required to be included in record keeping

P 1: APPENDD2.txt - 1:1283 (227:228) (Super)  
Codes: [Communication]

Personnel was unaware of the specific requirements for the storage and maintenance of batteries

P 1: APPENDD2.txt - 1:1284 (230:230) (Super)  
Codes: [Communication]

Personnel was unaware of the specific requirements for this storage locker

P 1: APPENDD2.txt - 1:1285 (232:232) (Super)  
Codes: [Communication]

Personnel was unaware of the specific labeling requirements

P 1: APPENDD2.txt - 1:1286 (234:235) (Super)  
Codes: [Communication]

Personnel was unaware of the specific requirements for the storage and labeling of hazardous materials

P 1: APPENDD2.txt - 1:1287 (237:237) (Super)  
Codes: [Communication]

Personnel at Hangar 37 were not aware that fluorescent bulbs were potentially hazardous waste

P 1: APPENDD2.txt - 1:1289 (241:242) (Super)  
Codes: [Communication]



CES/CEO QAE is performing scheduled and nonscheduled inspections, but inspection does not include the disposal site. QAE unaware of requirement

P 1: APPENDD2.txt - 1:1290 (244:245) (Super)  
Codes: [Communication]

Personnel were aware that the PCB container needed to be labeled but were not aware that the storage building also required labeling

P 1: APPENDD2.txt - 1:1292 (249:250) (Super)  
Codes: [Communication]

Personnel at installation did not know that these two waste streams required a separate hazardous waste determination

P 1: APPENDD2.txt - 1:1293 (252:252) (Super)  
Codes: [Communication]

Personnel did not understand that allowing paint to dry before disposal constituted treatment

P 1: APPENDD2.txt - 1:1298 (265:265) (Super)  
Codes: [Communication]

Personnel were confused as to the exact requirement for MSDS in the Supply warehouse

P 1: APPENDD2.txt - 1:1300 (269:269) (Super)  
Codes: [Communication]

Personnel did not understand the labeling and storage requirements

P 1: APPENDD2.txt - 1:1311 (88:92) (Super)  
Codes: [Communication]

A base standard wastewater treatment procedure is required to govern the discharge of industrial and non-domestic waste to the sanitary system in accordance with AFI 32-1067. Conditions are present for potential discharge of non-permitted industrial waste to sanitary sewer located near diesel lines and



tank in Bldg. Sanitary drains are located in several industrial-use areas such as AAFES service station and other Bldg

P 1: APPENDD2.txt - 1:1312 (114:114) (Super)  
Codes: [Communication]

The Env Flight classifies AFB as a "generator" facility and not an interim status facility

P 1: APPENDD2.txt - 1:1313 (144:144) (Super)  
Codes: [Communication]

No awareness of regulatory requirement

P 1: APPENDD2.txt - 1:1316 (109:110) (Super)  
Codes: [Communication]

Personnel at the Chiller Plant and CEV were unaware of the requirement to provide notification prior to planned releases to the atmosphere during maintenance periods

P 1: APPENDD2.txt - 1:1317 (130:135) (Super)  
Codes: [Communication]

AFB lacks a basewide inventory of standing structures that are potentially eligible for listing on the National Register. The buildings that predate the military installation have been identified, as have the significant Cold War structures. However, facilities more than 50 years old associated with the early days of AFB have not been identified and evaluated, nor have other structures that may be exceptionally significant Cold War resources. These buildings must be systematically inventoried, and the inventory coordinated with the SHPO

P 1: APPENDD2.txt - 1:1318 (146:147) (Super)  
Codes: [Communication]

The responsible organization was unaware that a permit to construct an air emission source was required in addition to a building construction permit

P 1: APPENDD2.txt - 1:1320 (165:166) (Super)  
Codes: [Communication]



The power production job of CE was absorbed by the exterior electric shop and personnel were not aware of the requirement

P 1: APPENDD2.txt - 1:1325 (202:202) (Super)  
Codes: [Communication]

Personnel working in the area were not aware of hazardous waste management procedures

P 1: APPENDD2.txt - 1:1326 (247:247) (Super)  
Codes: [Communication]

Shop supervisor was unaware that the required labeling must be present at each degreaser

P 1: APPENDD2.txt - 1:1331 (314:315) (Super)  
Codes: [Communication]

Company was apparently unaware of the state licensing requirements for businesses engaging in pest control services for compensation

P 1: APPENDD2.txt - 1:1333 (320:321) (Super)  
Codes: [Communication]

Four units were registered with EPA. Contract effective 1 Oct 1996. Contractors assumed all equipment was registered

P 1: APPENDD2.txt - 1:1334 (323:324) (Super)  
Codes: [Communication]

Carbon dioxide compressed gas cylinders are not properly secured at the Concession stand. One cylinder is used to prop open a door

P 1: APPENDD2.txt - 1:1338 (340:341) (Super)  
Codes: [Communication]

Personnel were not aware that the manager was required to attend this course once every 3 years



P 1: APPENDD2.txt - 1:1339 (343:343) (Super)  
Codes: [Communication]

Supervisors in most areas were not aware of training and documentation requirements

P 1: APPENDD2.txt - 1:1340 (345:347) (Super)  
Codes: [Communication]

QAE personnel, who are assigned responsibilities to monitor the contractor's performance of pest management services, were not aware that they must have pest management training prior to being assigned these responsibilities

P 1: APPENDD2.txt - 1:1345 (367:368) (Super)  
Codes: [Communication]

Personnel who handle hazardous materials do not have documentation of their HAZCOM training and/or have not received any HAZCOM training

P 1: APPENDD2.txt - 1:1347 (375:376) (Super)  
Codes: [Communication]

Daily gauging had not been accomplished for the past two weeks. The primary tank custodian had recently retired, and the alternate custodian had not received training

P 1: APPENDD2.txt - 1:1350 (385:386) (Super)  
Codes: [Communication]

The Chief, Horizontal, acts as the AF Installation Pest Control Supervisor since the position is vacant. The individual does not have any pest management certification

P 1: APPENDD2.txt - 1:1353 (397:399) (Super)  
Codes: [Communication]

Multiple shops have not performed site-specific hazard communication training. Documentation could not be produced to show completion of training (AF Form



55 or CAMS Training Computer System). Examples of shops deficient in training: MXS/LGMFN, MXS/LGMCF, SOS/DOL

P 1: APPENDD2.txt - 1:1355 (405:407) (Super)  
Codes: [Communication]

Carryover finding from the 1995 Internal ECAMP. The installation did not have a training package that provided information on building structure, site and object maintenance, and penalties for disturbing cultural resources

P 1: APPENDD2.txt - 1:1360 (425:427) (Super)  
Codes: [Communication]

Carried forward from the 1996 Internal ECAMP, the base has not coordinated the outdoor recreation potential, with the Park Service or state officials. There is no outdoor recreation component plan to implement any recreation program

P 1: APPENDD2.txt - 1:1362 (432:433) (Super)  
Codes: [Communication]

Repeated from 1993 External ECAMP, PCB inspection records are not maintained for three years after disposing of the transformer. Most records date back to only one year prior

P 1: APPENDD2.txt - 1:1365 (447:450) (Super)  
Codes: [Communication]

Repeated from the 1994 Internal ECAMP, Pest Management personnel are not monitored for physical examinations. Personnel at ANG/Medical Group are with the understanding that AG personnel are being monitored by AMDS/SGPM when in fact AMDS does not perform any medical surveillance for weekend ANG personnel

P 1: APPENDD2.txt - 1:1366 (438:441) (Super)  
Codes: [Communication]

Remaining open from the 1993 External ECAMP, the base does not have a comprehensive basewide environmental monitoring plan that identifies the



locations and monitoring/sampling procedures for environmental media. Sampling and Analysis Plans (SAM) are to be updated annually

P 1: APPENDD2.txt - 1:1369 (461:463) (Super)  
Codes: [Communication]

Carryover finding from the 1995 Internal ECAMP. Industrial wastewater discharges into the sewage system require certificates issued by the FOTW. 85 applications had been submitted to the FOTW, but only 40 certificates had been issued. Of the 40 certificates, 7 had expired

P 1: APPENDD2.txt - 1:1376 (491:492) (Super)  
Codes: [Communication]

Personnel thought the previous write-up was corrected. The storage room was used to store flammable materials for the jet engine shop

P 1: APPENDD2.txt - 1:1377 (494:495) (Super)  
Codes: [Communication]

There was no implementation letter or planned method of implementing the new draft that would ensure the information reached all responsible organizations

P 1: APPENDD2.txt - 1:1378 (497:498) (Super)  
Codes: [Communication]

The facility has recently been relocated to a new building and all other signs and security controls had been relocated. This one was just overlooked

P 1: APPENDD2.txt - 1:1379 (500:501) (Super)  
Codes: [Communication]

A new plan was written after the last external ECAMP; however, the new plan did not remedy all the issues brought up in the finding

P 1: APPENDD2.txt - 1:1380 (503:508) (Super)  
Codes: [Communication]



Remaining open from the 1993 External ECAMP, on south side of Bldg inside compound adjacent to pesticide facility, there is a 120/240 size transformer on a wooden pallet. The transformer appears to be old. Personnel located at Bldg stated the transformer was used only for training exercises. However, transformer has not been tested for PCBs. The ABW/CEOIE shop does not have the transformer on record. It's possible, according to personnel at the ANG, that the transformer was here before CE and EM began inventory

P 1: APPENDD2.txt - 1:1382 (515:516) (Super)  
Codes: [Communication]

Repeat finding from the 1995 Internal ECAMP. The AST was not marked with a "NO SMOKING" sign

P 1: APPENDD2.txt - 1:1386 (530:530) (Super)  
Codes: [Communication]

Corrective actions were taken but not reported to the person cited

P 1: APPENDD2.txt - 1:1387 (532:533) (Super)  
Codes: [Communication]

MAP is being updated as required, but complete information was not listed in either the current MAP or the draft update

P 1: APPENDD2.txt - 1:1388 (535:538) (Super)  
Codes: [Communication]

The storm water PP Plan dated 24 Feb 96 needs to be updated. Many items identified by a 1994 Reveal Team have been corrected but not documented in the plan. Ensure that the plan is reviewed and updated annually. Consider adding a "summary of changes" page to capture/document reviews and updates

P 1: APPENDD2.txt - 1:1389 (540:541) (Super)  
Codes: [Communication]

The MOU support of the liquid fuel systems stipulates the MOU will be updated annually. This review has not been accomplished



P 1: APPENDD2.txt - 1:1390 (543:546) (Super)  
Codes: [Communication]

The Oct 95 pollution prevention plan lacks several elements and contains outdated POC lists. Pollution areas not adequately addressed are Affirmative Procurement, Energy conservation and air and water pollutant reduction. In addition, the execution section is still generic in tone and has procedures to be developed

P 1: APPENDD2.txt - 1:1391 (548:551) (Super)  
Codes: [Communication]

Operating plan does not adequately address several requirements of AFI 32-1052, para 6. Plan does not establish inspection and repair teams. Plan does not reference AFD 32-70 or AFI 91-301. Plan does not address equipment and supply requirements, yearly budget estimates, or requirements for a special response team

P 1: APPENDD2.txt - 1:1393 (557:559) (Super)  
Codes: [Communication]

The installation's Emergency Planning and Response Plan had not received HQ approval. The plan's reporting procedure did not include HQ, and did not state the requirement for release reporting through WIMS-ES

P 1: APPENDD2.txt - 1:1395 (563:566) (Super)  
Codes: [Communication]

Copies of AFI 32-1066, Plumbing Systems and AFI 32-1067, Water Systems, are not maintained. Program not documented in accordance with AFI 32-1066. Inventory is not maintained. Survey of prevention devices has not been coordinated with Bioenvironmental Engineering to assign degrees of hazard to each cross connection

P 1: APPENDD2.txt - 1:1396 (568:568) (Super)  
Codes: [Communication]

There is no hazardous chemical inventory list

P 1: APPENDD2.txt - 1:1397 (570:573) (Super)



Codes: [Communication]

Nine vent hoods in Bldg are not included in the base inventory. These hoods vent acid gases to the atmosphere from lab benches. These are hazardous air pollution sources. If these sources of hazardous air pollutants are not considered in calculations to qualify for a synthetic minor source status, exemption from Title V may be put into question

P 1: APPENDD2.txt - 1:1398 (575:578) (Super)

Codes: [Communication]

There was an overall lack of correlation between the Pollution Prevention Plan, Opportunity Assessments, and A-106 funding requirements. Several opportunities identified in the Opportunity Assessment were not addressed in the Pollution Prevention Management Plan, nor was there a project identified in the A-106

P 1: APPENDD2.txt - 1:1402 (591:592) (Super)

Codes: [Communication]

The pesticide contracts do not include Statement of Work (SOW). The personnel from CEV are aware of the requirement and are working the issue

P 1: APPENDD2.txt - 1:1403 (594:596) (Super)

Codes: [Communication]

Documentation was not available to determine compliance with State permit requirements. A log to include incinerator charging rate or types of materials was not available. An operator's manual was not available in the vicinity of the incinerator

P 1: APPENDD2.txt - 1:1404 (598:605) (Super)

Codes: [Communication]

The existing Integrated Natural Resource Management Plan is inadequate in the following areas: Lack of specific survey and management plan guidelines, lack of solutions for potential natural resource impacts, lack of timeline for execution of goals. Recently completed plans and surveys must be incorporated, and SOW must be written and funds programmed to complete additional requirements (such as comprehensive plant survey, raptor survey and management plan, and



cropland and grazing plan). The existing land management plan and outdoor recreation plan are stale and should be updated with specific management goals. All information should be incorporated into the installation's comprehensive plan

P 1: APPENDD2.txt - 1:1408 (625:626) (Super)  
Codes: [Communication]

The contingency plan does not include emergency procedures to be followed by the emergency coordinator, as set out in 22 CAR 66265.56

P 1: APPENDD2.txt - 1:1410 (637:640) (Super)  
Codes: [Communication]

For the week of 7/29-8/3/96 the daily inspection sheet for the Auto Hobby Shop has already been filled out. Also there is a stack of already filled out inspection sheets that just need a date written in. All previous inspection sheets all look the same. The container information on the pre-filled out sheets does not match actual on-hand inventories at the IAP

P 1: APPENDD2.txt - 1:1411 (642:643) (Super)  
Codes: [Communication]

New plan (1 Apr 94) was distributed and ECAMP finding 7-4 closed out, but the tanks in question were still not incorporated in the plan

P 1: APPENDD2.txt - 1:1414 (652:652) (Super)  
Codes: [Communication]

There are no maintenance or leak-test records for the permitted R12 recharge equipment

P 1: APPENDD2.txt - 1:1415 (654:658) (Super)  
Codes: [Communication]

Under the Multi-Sector General Permit for Industrial Activity, the permittee must develop a Storm Water Pollution Prevention Plan (SWP3) that reflects the requirement of the General Permit. Although AFB has a SWP3, Nov 94, it was developed to support the exemption of AFB from storm water permitting and



not in support of the NOI for the Multi-Sector Permit, and does not contain all the required provisions for a SWP3 for Motor Freight Transportation Facility

P 1: APPENDD2.txt - 1:1418 (666:667) (Super)  
Codes: [Communication]

Current BES baseline and annual industrial hygiene survey reports are not maintained by the water treatment plant supervisor

P 1: APPENDD2.txt - 1:1420 (674:676) (Super)  
Codes: [Communication]

Fuel transfer pipelines are routinely inspected by LFM personnel. However, a record of there inspections is not being produced. The checklists that have been developed for these inspections are outdated and do not reflect current facility configurations

P 1: APPENDD2.txt - 1:1421 (678:680) (Super)  
Codes: [Communication]

The September 1995 waste analysis plan does not include all waste streams that should be tested. It omits the following: crushed glass from Bldg , sludge and filters from the aqueous parts cleaners in Bldgs, and incinerator ash from Bldg

P 1: APPENDD2.txt - 1:1423 (687:687) (Super)  
Codes: [Communication]

The fire department was working from an out-dated list of hazardous waste locations

P 1: APPENDD2.txt - 1:1426 (694:694) (Super)  
Codes: [Communication]

The documents were prepared in a timely way, only a slight tracking error occurred

P 1: APPENDD2.txt - 1:1427 (696:697) (Super)  
Codes: [Communication]



Efforts were made to update the May 94 draft plan with a Nov 95 plan, but additional items or corrections were not included in the latest plan

P 1: APPENDD2.txt - 1:1430 (710:712) (Super)  
Codes: [Communication]

The Base Hazardous Waste Management Plan and the Spill Prevention Response Plan refer to each other for the contingency planning data required by 40 CFR 265.52 (i.e., each document states that the other document includes the contingency plan)

P 1: APPENDD2.txt - 1:1431 (714:714) (Super)  
Codes: [Communication]

The plan was updated in March 1997, but the update did not address all requirements

P 1: APPENDD2.txt - 1:1432 (716:716) (Super)  
Codes: [Communication]

This was an example of oversight. All other Safety Kleen manifests had LDRs

P 1: APPENDD2.txt - 1:1434 (720:722) (Super)  
Codes: [Communication]

The Oct 96 Asbestos Management and Operations Plan contained outdated references and responsibility assignments. The plan also contained procedures which have been superseded either formally or by "common practices"

P 1: APPENDD2.txt - 1:1435 (724:731) (Super)  
Codes: [Communication]

The Oct 96 revision of the LBP Management Plan still contains inaccurate references to a draft AF Policy on LBP in Facilities and a reference to EPA future training and certification requirements to be finalized in May 94. The AF policy was finalized and implemented in May 93 and the EPA requirements for LBP activities in target facilities was issue in the 29 Aug 96 Federal Register with various implementation requirements stretching through 1999. In addition, the plan does not address a few key responsibilities assigned in the AF Policy such as CE's responsibility to train facility managers and the BEE's responsibility to conduct sampling and testing of paint



P 1: APPENDD2.txt - 1:1436 (733:734) (Super)  
Codes: [Communication]

Records were revised to reflect usage and identify materials used, but VOC content is not tracked

P 1: APPENDD2.txt - 1:1439 (741:745) (Super)  
Codes: [Communication]

AFB Hazardous Materials Emergency Response Plan (HMERP) dated 30 Aug 96, considered the BAFB Spill Prevention Control and Countermeasures Plan (SPCC Plan) has not been reviewed by a registered professional engineer. The AFB HMERP as distributed, has been miss-printed and needs to be corrected. The site-specific contingency plan data for Boiler Plant are not correct. The Appendix A tabulation of aboveground and underground storage tanks is not accurate

P 1: APPENDD2.txt - 1:1441 (751:752) (Super)  
Codes: [Communication]

The site-specific spill plan for the base lacks details on drain controls or provide incorrect information. Examples include Analytical Labs

P 1: APPENDD2.txt - 1:1442 (754:762) (Super)  
Codes: [Communication]

There was no separate Facility Response Plan (FRP) for AFB as required by the Oil Pollution Act (OPA) of 1990, which amended Section 311 of the Clean Water Act. There was a chapter of OPA's requirements in the Spill Prevention and Response (SPR) Plan entitled Emergency Planning and Response Plan (EPRP). However, the two plans are different and combining them is not allowed. The purpose of the FRP is to extend prevention and preparedness activities, improve response capabilities, ensure responsible parties pay the cost of spill cleanup, etc., to the maximum extent practicable and for the worst case discharge. There are numerous interactions and agreements among on-base and off-base agencies for a coordinated effort if a catastrophic spill should occur

P 1: APPENDD2.txt - 1:1443 (764:765) (Super)  
Codes: [Communication]



Pollution Prevention Plan met all requirements of the state, but didn't fulfill all requirements of the Air Force Instruction

P 1: APPENDD2.txt - 1:1444 (767:767) (Super)  
Codes: [Communication]

The spill response plan was not verified against the tank inventory maintained within CE

P 1: APPENDD2.txt - 1:1445 (769:770) (Super)  
Codes: [Communication]

The cover letter for the plan asks for any updates or corrections, but none were identified or submitted

P 1: APPENDD2.txt - 1:1446 (772:773) (Super)  
Codes: [Communication]

The form used for the operating record provides a field for the date of removal; however, in some cases this field has not been completed

P 1: APPENDD2.txt - 1:1447 (775:780) (Super)  
Codes: [Communication]

Hazardous materials provided to various organizations free by vendors or provided for evaluation testing are not represented in the basewide inventory maintained by HMC. Examples of such evaluation activities are found at Dental Investigation Services and Vehicle Maintenance. The basewide inventory is also incomplete because hazardous materials already in the possession of the organizations at the inception of the HMC were not retroactively added to the inventory. Examples of such pre-HMC inventories are found at Analytical Services

P 1: APPENDD2.txt - 1:1452 (799:802) (Super)  
Codes: [Communication]

An unlabeled drum of empty aerosol cans was not classified as a hazardous waste and was not located in the established initial accumulation point. Facility personnel incorrectly thought that the cans would be brought to the newly



established hazardous materials pharmacy, though they should be taken to the CEV 90-day accumulation site

P 1: APPENDD2.txt - 1:1453 (804:804) (Super)  
Codes: [Communication]

Quarterly Pesticide inventories are not provided to base fire station #1

P 1: APPENDD2.txt - 1:1456 (812:814) (Super)  
Codes: [Communication]

The base has not had either State or Federal Fish and Wildlife agencies tour the base to determine if there is a potential for fish and wildlife management, or made any determination of classification in accordance to the AFI

P 1: APPENDD2.txt - 1:1460 (822:825) (Super)  
Codes: [Communication]

Landscaping does not make maximum use of informal, native, low-maintenance designs and plant materials. Watering is not done in accordance with the Land Management Plan or wings commitment to water conservation and water has been pooled throughout landscaped areas of the cantonment

P 1: APPENDD2.txt - 1:1463 (835:837) (Super)  
Codes: [Communication]

The installation had not consulted with the USFWS to obtain a category rating. If the installation is determined to be a Category 1, then a 2-year Fish and Wildlife Management Component Plan must be developed

P 1: APPENDD2.txt - 1:1466 (849:850) (Super)  
Codes: [Communication]

Pathological incinerator hours of operation are not recorded as required by Code. Temperature and oxygen content of exhaust gases are not continuously measured and recorded

P 1: APPENDD2.txt - 1:1468 (855:856) (Super)  
Codes: [Communication]



The fuel pumps at both the AAFES and Military Gas Stations do not have signs required by state. (They do have the federally required language, however.)

P 1: APPENDD2.txt - 1:1469 (858:859) (Super)  
Codes: [Communication]

Even though the likelihood that the operations at the old FTA resulted in any contamination is slim, it still must be assessed before demolition and repaving occurs

P 1: APPENDD2.txt - 1:1470 (861:863) (Super)  
Codes: [Communication]

Although the requirements had been brought to the attention of base managers, the gazebo construction project was completed in a floodplain with no environmental assessment, FONSI, or FONPA

P 1: APPENDD2.txt - 1:1471 (865:866) (Super)  
Codes: [Communication]

CEV does provide quarterly recycling reports to MAJCOM. Personnel unaware BX/Commissary bypassing base recycling process

P 1: APPENDD2.txt - 1:1474 (882:882) (Super)  
Codes: [Communication]

Must review IEX coding procedures with HMP and BE prior to purchase of LP Hazmat

P 1: APPENDD2.txt - 1:1476 (887:888) (Super)  
Codes: [Communication]

The permits for USTs, obtained from the appropriate municipal fire authorities, expired in 1995. No requests have been made for permit extensions

P 1: APPENDD2.txt - 1:1478 (893:894) (Super)  
Codes: [Communication]



CE supply has a hazardous communication program in place which should address these storage issues. It appears that no self-inspection is conducted

P 1: APPENDD2.txt - 1:1479 (896:897) (Super)  
Codes: [Communication]

The vehicle maintenance area has a good overall hazard communication program. More frequent inspections would solve this problem in the future

P 1: APPENDD2.txt - 1:1481 (901:902) (Super)  
Codes: [Communication]

Personnel failed to follow the shop written hazard communication program is in place, which states the requirement for a hazardous chemical inventory

P 1: APPENDD2.txt - 1:1482 (904:905) (Super)  
Codes: [Communication]

Established procedures followed by this shop require MSDS's for all hazardous materials used there. These procedures were not followed

P 1: APPENDD2.txt - 1:1489 (925:927) (Super)  
Codes: [Communication]

WD40 and paint cans were found in a dumpster at Bldg. The dumpster at Bldg contained a paint can with more than an inch of liquid gray paint. The dumpster at Bldg contained several fluorescent light tubes

P 1: APPENDD2.txt - 1:1493 (941:941) (Super)  
Codes: [Communication]

Newcomer briefings and follow-up training in natural resources is inadequate

P 1: APPENDD2.txt - 1:1494 (943:944) (Super)  
Codes: [Communication]

Aerosol containers are being vented with a hammer and then tossed into a recycling bin. The unit does not have a permit to treat



P 1: APPENDD2.txt - 1:1495 (946:949) (Super)  
Codes: [Communication]

IAPs are located in the supply building (which is at or near the point of generation) for alkaline, lithium, and nicad batteries. The described wastes are then brought to another IAP located outside the building before they are transferred to the 90-day accumulation point. Wastes must be moved from an IAP directly to the 90-day storage area without an intermediate stop

P 1: APPENDD2.txt - 1:1496 (951:957) (Super)  
Codes: [Communication]

A process in the testing facility generates rags contaminated with MEK. These rags are currently placed in the drum containing POL-contaminated absorbent material, a nonhazardous waste. This procedure is not correct because the MEK-contaminated rags are a separate waste stream. 40 CFR 262.11 requires that a determination be made on each waste stream to determine whether that waste is hazardous or not. Because the MEK-contaminated rags are a listed hazardous waste and the POL-contaminated absorbent material is handled as a nonhazardous solid waste, the MEK material has been inappropriately disposed of in the past

P 1: APPENDD2.txt - 1:1497 (959:962) (Super)  
Codes: [Communication]

The floor drain at Refueling Maintenance collects sediment and other debris due to the operations in the facility. Currently this sediment is cleaned out of the drain approximately quarterly and thrown away with nonhazardous solid waste. 40 CFR 262.11 requires that the base determine whether or not this waste stream is hazardous

P 1: APPENDD2.txt - 1:1498 (964:965) (Super)  
Codes: [Communication]

Empty "Fumitoxin" aluminum containers are "triple-rinsed" by soaking containers in a 55-gal. drum of water. The rinsate is then dumped near railroad tracks

P 1: APPENDD2.txt - 1:1499 (967:969) (Super)



Codes: [Communication]

In the laboratories, waste is generated in the separate laboratories and accumulated in small containers. At the end of the day the waste is taken to a designated, centralized IAP, which is in another area within the same building

P 1: APPENDD2.txt - 1:1500 (971:973) (Super)

Codes: [Communication]

The grounds shop is issuing two different, non-approved weed and feed materials through the Self-Help Store. A summer weed and feed with Trimec and a crabgrass control herbicide are issued to MFH occupants and building managers upon request

P 1: APPENDD2.txt - 1:1501 (975:976) (Super)

Codes: [Communication]

In Bldgs alcohol's are disposed of directly to the sanitary sewer. These alcohol's would be hazardous waste if otherwise disposed

P 1: APPENDD2.txt - 1:1502 (978:981) (Super)

Codes: [Communication]

None of the items on the Base Supply Retail Sales store shelves are identified as containing recycled content, except those labeled by the supplier as such.: Types of paper in the GSA catalog that meet the Executive Order requirement are not easily identified. Each user specifies their specific needs

P 1: APPENDD2.txt - 1:1504 (987:987) (Super)

Codes: [Communication]

The nozzles on two eyewash stations are not covered to prevent contamination

P 1: APPENDD2.txt - 1:1506 (992:994) (Super)

Codes: [Communication]

Since the Snow Barn personnel bring waste solvent with asphalt from remote site property jobs and add it to their hazardous waste drum, the waste is not accumulated at or near the point of generation, and the site cannot be an IAP



P 1: APPENDD2.txt - 1:1509 (1003:1004) (Super)  
Codes: [Communication]

Bulbs will be recycled, and are therefore being accumulated at the recycle center. However, because they are hazardous they should be accumulated at the 270-day area

P 1: APPENDD2.txt - 1:1510 (1006:1009) (Super)  
Codes: [Communication]

When servicing hydrazine cylinders, a pan of water is placed under the cylinder to catch drips. The hydrazine-contaminated water is neutralized with bleach, the pH in the wastewater is then adjusted. The wastewater is disposed of through DRMO as non-regulated waste. Hydrazine is a listed waste (U133), and spill residue continues to bear the same waste code

P 1: APPENDD2.txt - 1:1511 (1011:1014) (Super)  
Codes: [Communication]

The effluent collected during the clean-out of oil/water separators and discharged to manhole was composed of both wastewater and sludge. This discharge was not consistent with the base guidance on wastewater discharge from oil/water separators (AFB O/W Separator Clean-out Plan, 1995) and as reported to the city

P 1: APPENDD2.txt - 1:1512 (1016:1019) (Super)  
Codes: [Communication]

There are a number of air pollution emitting sources that are operating without a construction permit, an operating permit, or a valid permit exemption required by 62-210.300. These sources include numerous degreasers, seven paint booths, the area 400 fuel stand, and abrasive blaster equipment

P 1: APPENDD2.txt - 1:1513 (1021:1025) (Super)  
Codes: [Communication]

Documentation was not available to determine type of waste by percentage (paper vs. plastic) and load rate (pounds/hour). A copy of the operators manual was not available in the vicinity of the incinerator. The log indicated that items



burned as 80 bags, 50 boxes, etc. which is not specific enough to meet permit requirements. Log entries indicate that unauthorized materials were burned (microfiche and film)

P 1: APPENDD2.txt - 1:1514 (1027:1030) (Super)  
Codes: [Communication]

The dental lab treats their spent hydrofluoric acid with an "acid neutralizer" and then washes the spent solution down the drain with the approval of MG/SGPB. However, according to HQ SGPB, except for acids neutralized "in process," this acid should be collected, tested, and managed as a hazardous waste

P 1: APPENDD2.txt - 1:1515 (1032:1034) (Super)  
Codes: [Communication]

The waste has not been stored in a designated hazardous waste storage area because the waste has not been conclusively determined to be hazardous. The procedures that the Base has in place do not ensure the receipt of analytical results within the 90-day time limit

P 1: APPENDD2.txt - 1:1519 (1045:1048) (Super)  
Codes: [Communication]

The fuels shop uses small amounts of MEK on rags to remove grease. When the rags are no longer useable, they are placed in the POL nonhazardous waste drum for disposal. Because MEK is a listed hazardous waste and the POL drip pads are disposed of as nonhazardous waste, the MEK rags have been inappropriately disposed of in the past

P 1: APPENDD2.txt - 1:1520 (1050:1051) (Super)  
Codes: [Communication]

The base has taken steps to change its management process though the result still may not meet the intent of the federal rules

P 1: APPENDD2.txt - 1:1523 (1057:1059) (Super)  
Codes: [Communication]



The hazardous waste labels were placed on the drums and marked "pending analysis" as a precaution while awaiting results from the lab

P 1: APPENDDD2.txt - 1:1524 (1061:1064) (Super)  
Codes: [Communication]

Methyl Ethyl Ketone (MEK) is used in a paint stripping process in Hangar 2. After use, the spent MEK is disposed of along with POL-contaminated rags as nonhazardous solid waste. Because MEK is a listed hazardous waste, it must be managed as such and has been inappropriately managed in the past

P 1: APPENDDD2.txt - 1:1527 (1073:1074) (Super)  
Codes: [Communication]

Flammable and corrosive containers were being stored together on the same containment pallet, and the pallet was positioned next to combustibles

P 1: APPENDDD2.txt - 1:1528 (1076:1076) (Super)  
Codes: [Communication]

Flammable liquids are not stored in proper cabinets

P 1: APPENDDD2.txt - 1:1529 (1078:1078) (Super)  
Codes: [Communication]

Two compressed gas cylinders are stored without safety caps

P 1: APPENDDD2.txt - 1:1534 (1095:1096) (Super)  
Codes: [Communication]

Two cylinders of oxygen and one acetylene cylinder are stored together. They are not in-service and are not clearly marked

P 1: APPENDDD2.txt - 1:1535 (1098:1099) (Super)  
Codes: [Communication]

A container of mercury waste (approximately 3.5 lbs.) is unlabeled and open (stopper with open tubing)



P 1: APPENDD2.txt - 1:1536 (1101:1102) (Super)  
Codes: [Communication]

Five-gallon waste containers in IAPs in Bldg are not labeled. Five-gallon containers are open (funnel in place)

P 1: APPENDD2.txt - 1:1537 (1104:1105) (Super)  
Codes: [Communication]

A container of hazardous waste does not have a label identifying the common name of its contents

P 1: APPENDD2.txt - 1:1538 (1107:1113) (Super)  
Codes: [Communication]

As many as 14 55-gal. drums are used to store used oil in a caged roof storage area north of the building before a DRMO contractor removes oil for off-site recycling. None of the drums has the label "USED OIL" as required. Housekeeping in the cage is poor. All of the drums have spilled oil or oil-saturated absorbent pads on their lids. Some of the drums have open bungs. An oil/water separator located in the cage is full of oil and debris. Also, containers of what appears to be used motor oil are outside the cage, apparently left there the night before by persons unknown

P 1: APPENDD2.txt - 1:1540 (1119:1121) (Super)  
Codes: [Communication]

Flammable and hazardous materials are stored in a common personnel locker. Locker marked as "FLAMMABLE." Flammable materials found in personnel locker (paints, alcohol). No inventory on locker

P 1: APPENDD2.txt - 1:1541 (1123:1125) (Super)  
Codes: [Communication]

A worker had punched a hole in a 5-gallon container opposite the pouring spout to equalize pressure in the can when pouring. The lid was secure on the spout, but the holes resulted in open venting of the container



P 1: APPENDD2.txt - 1:1542 (1127:1129) (Super)  
Codes: [Communication]

Flammable aerosol paint cans, solvents, lubricants and cleaners in shop are not stored in flammable storage cabinet. Contract cleaning service is storing several cans of a combustible cleaner in an office cabinet with combustible materials (rags)

P 1: APPENDD2.txt - 1:1543 (1131:1132) (Super)  
Codes: [Communication]

Three 5-gallon plastic containers containing paint thinner were improperly stored on top of a flammable storage cabinet

P 1: APPENDD2.txt - 1:1545 (1139:1140) (Super)  
Codes: [Communication]

One bottle stored in a HAZMAT storage cabinet did not have any label or markings. It was determined to contain pump oil

P 1: APPENDD2.txt - 1:1546 (1142:1143) (Super)  
Codes: [Communication]

Five jerry cans, each containing variable amounts of an unknown liquid, are unlabeled and located in the former generator building

P 1: APPENDD2.txt - 1:1548 (1148:1148) (Super)  
Codes: [Communication]

One bottle of sodium chlorite (an oxidizer) is being stored in a flammable cabinet

P 1: APPENDD2.txt - 1:1549 (1150:1151) (Super)  
Codes: [Communication]

There are 15 rusted drums located between Bldgs. Although some labels indicate "empty" the drums have unidentified material in them. Ownership of the drums is unclear

P 1: APPENDD2.txt - 1:1552 (1161:1161) (Super)



Codes: [Communication]

Respirator with a face shield is stored next to insecticides in wall locker

P 1: APPENDD2.txt - 1:1557 (1173:1175) (Super)

Codes: [Communication]

An open beaker of used fixer (glutaraldehyde/paraformaldehyde/sodium cacodylate) is stored under the hood. Although marked "Used Daily Fixer," and destined for the IAP container at the end of the day, it is being accumulated at this point of generation in this open container

P 1: APPENDD2.txt - 1:1558 (1177:1183) (Super)

Codes: [Communication]

Dental and medical X-ray departments in Bldg is accumulated in five-gal. containers. When full, they are transferred to supply for silver recovery. The containers are not in an established IAP, are not properly labeled (the words Hazardous Waste, the AFB RCRA ID number and the hazard), and no inspections are performed. This is also the case at Bldg 125 where fixer accumulated for silver recovery is in improperly labeled containers, and do not meet IAP requirements. Also there are no records to document these precious metals are not being accumulated speculatively

P 1: APPENDD2.txt - 1:1559 (1185:1186) (Super)

Codes: [Communication]

Acid waste is stored in an acid cabinet. Although the waste container is properly labeled, this is not a designated IAP, has no monitor, no inspection log, etc

P 1: APPENDD2.txt - 1:1560 (1188:1189) (Super)

Codes: [Communication]

Waste oil is being collected and stored in an unlabeled container. The container collecting oil under the oil filter press/drain device has no hazardous waste labels

P 1: APPENDD2.txt - 1:1561 (1191:1194) (Super)

Codes: [Communication]



A 2,000-gal. AST holding #2 heating fuel has no label. "NO SMOKING" signs are not posted in the area of this tank. A second, 500-gal. AST holding diesel fuel also has no label and is located outside of Bldg. The tank can be identified by the fact that it is coated with a black asphalt coating

P 1: APPENDD2.txt - 1:1562 (1196:1197) (Super)  
Codes: [Communication]

Compressed gas cylinders were being stored on asphalt pavement. Asphalt is oil based and not compatible with oxygen storage

P 1: APPENDD2.txt - 1:1564 (1202:1205) (Super)  
Codes: [Communication]

Five drums were found in a 90-day storage area without accumulation start dates. According to 40 CFR 262.34 (a)(2), the date for which each period of accumulation begins must be clearly marked and visible for inspection. The drums contained hazardous paint waste, off-specification gasoline, gasoline filters, and aerosol cans

P 1: APPENDD2.txt - 1:1565 (1207:1208) (Super)  
Codes: [Communication]

Two high-voltage transformers are incorrectly labeled as non-PCB (<50 ppm). Analytical results indicate PCB concentrations are >50 ppm)

P 1: APPENDD2.txt - 1:1567 (1213:1216) (Super)  
Codes: [Communication]

Two unlabeled drums (one 55 gal. and one 20 gal.) full of lithium batteries are located outside rear of Bldg. The drums were delivered to this location from the airport area about 30 days ago. The three-day limit is exceeded and the location of this IAP is not near the point of generation

P 1: APPENDD2.txt - 1:1569 (1221:1221) (Super)  
Codes: [Communication]

There is one five-gallon gasoline container open in the Golf Course maintenance shed



P 1: APPENDD2.txt - 1:1570 (1223:1225) (Super)  
Codes: [Communication]

A five-gal. container located inside the storage building has no labels to identify the hazardous contents, appropriate warnings and/or the chemical manufacturer, distributor or other responsible party

P 1: APPENDD2.txt - 1:1571 (1227:1230) (Super)  
Codes: [Communication]

Twenty-four of 93 dumpsters inspected were open and contained food wastes, and 13 of 93 dumpsters inspected had broken lids and/or holes in the side/bottom which keeps the dumpsters from being closed. Dumpster is rusted through at side, dumpster has "tear" in side where fork lifts dumpster, and several dumpsters have broken or missing lids

P 1: APPENDD2.txt - 1:1572 (1232:1232) (Super)  
Codes: [Communication]

An open container of oily and unknown substance was placed adjacent to a storm drain

P 1: APPENDD2.txt - 1:1573 (1234:1239) (Super)  
Codes: [Communication]

The Auto Hobby Shop has a yard where customers can leave automobiles in various stages of repair for a fee. The yard is fenced and kept locked. Hidden in one corner of the yard is a row of neatly piled tires numbering around 125 and weighing approximately 900 lbs. The pile was originally in a more conspicuous spot and was moved in the last year to be less unsightly. The original ownership of the tires is no longer available. They have been abandoned and now the Auto Hobby Shop's responsibility for disposal

P 1: APPENDD2.txt - 1:1575 (1245:1250) (Super)  
Codes: [Communication]

There are several "sample" materials located in the flammable storage cabinet which the shop is not authorized to store/use. Shop personnel stated that the "sample" material as issued by the Hazardous Material Cell (HMC) /Distribution Support Center (DSC) as a possible "less hazardous" substitute. Material is being



evaluated by the shop. This hazardous material is not entered into the Hazardous Material Management System (HMMS). Material: Zinsser, Bulls Eye 1-2-3, Primer/Sealer; multiple colors of Sprayon, Clean-N-Safe, Aerosol Acrylic Enamels

P 1: APPENDD2.txt - 1:1576 (1252:1253) (Super)  
Codes: [Communication]

One 55-gal. drum of used oil does not have the required label of "USED OIL." The drum is labeled "30-weight oil" but facility personnel report the material to be used oil

P 1: APPENDD2.txt - 1:1577 (1255:1257) (Super)  
Codes: [Communication]

At various locations, used oil is being accumulated in improperly labeled containers. A 386-gal. AST storing used oil at Vehicle Maintenance also does not have the required label. The label does not contain the words "USED OIL" as required

P 1: APPENDD2.txt - 1:1578 (1259:1264) (Super)  
Codes: [Communication]

The corrosion control facility at Transportation generates two hazardous waste streams. One is liquid paint-related materials, and the other is solid paint-related materials. The drum containing the solid paint-related waste was not labeled. 40 CFR 262.34(c) requires that this drum be labeled to identify its contents. The liquid paint-related waste was contained in two drums at two locations. 40 CFR 262.34(c) also requires that the waste be located in one place and be limited to 55 gallons

P 1: APPENDD2.txt - 1:1579 (1266:1269) (Super)  
Codes: [Communication]

A red can used to accumulate rags contaminated with degreaser and oil is marked "SOILED RAGS -- EMPTY WEEKLY." It does not bear the words "HAZARDOUS WASTE" or an initial accumulation date. The rags are taken weekly to the ACCS in Maintenance but are not included in the Electrical Shop drum tracking logs



P 1: APPENDD2.txt - 1:1580 (1271:1274) (Super)  
Codes: [Communication]

A red can used to collect rags contaminated with grease and oils is marked "EMPTY DAILY." It does not bear the words "HAZARDOUS WASTE" or an initial accumulation date. The rags are taken daily to the ACCS in Bldg, but are not included in the ACCS Container Log. Container was labeled at the time of assessment

P 1: APPENDD2.txt - 1:1581 (1276:1277) (Super)  
Codes: [Communication]

Improper placement and labeling of biohazard receptacle. Improper labeling of biohazard receptacle

P 1: APPENDD2.txt - 1:1582 (1279:1279) (Super)  
Codes: [Communication]

An inventory of pesticides stored within the building is not posted outside of the storage area

P 1: APPENDD2.txt - 1:1583 (1281:1284) (Super)  
Codes: [Communication]

Most industrial shops on base collect spilled or otherwise off-specification POL. This material is collected in two 10,000-gallon tanks and eventually taken off base to be recycled. 40 CFR 279.22(c) requires that all containers used to accumulate these products be labeled "Used Oil." Currently, the collection points across the base are labeled inconsistently

P 1: APPENDD2.txt - 1:1585 (1290:1291) (Super)  
Codes: [Communication]

In Central Receiving, a flammable material cabinet contains an open, unlabeled coffee can holding cellulose nitrate, a highly flammable paint thinner. A used paint brush is also in the can

P 1: APPENDD2.txt - 1:1587 (1295:1297) (Super)  
Codes: [Communication]



Organization stores small amounts of hazardous waste in an industrial refrigerator (adhesion promoter and sealing compound containing MEK). The site is not designated or authorized as a satellite accumulation point

P 1: APPENDD2.txt - 1:1588 (1299:1300) (Super)  
Codes: [Communication]

A container of waste rags contaminated with MEK was unmarked, and there were no security measures to control access to the container

P 1: APPENDD2.txt - 1:1589 (1302:1302) (Super)  
Codes: [Communication]

Two compressed gas cylinders had no labels, and were only haphazardly secured

P 1: APPENDD2.txt - 1:1590 (1304:1305) (Super)  
Codes: [Communication]

A proper description of drum contents is stenciled on the drum. However, the proper description may be contradicted by previously stenciled text

P 1: APPENDD2.txt - 1:1591 (1307:1307) (Super)  
Codes: [Communication]

Unaware that there was an incompatibility, Not on the MSDS

P 1: APPENDD2.txt - 1:1592 (1309:1310) (Super)  
Codes: [Communication]

Personnel understand that used oil is not hazardous, but do not understand the potential for confusion arising from conflicting labels

P 1: APPENDD2.txt - 1:1593 (1312:1313) (Super)  
Codes: [Communication]

Two shipments of hazardous waste involving multiple drums of waste were stored on site for more than 90 days



P 1: APPENDD2.txt - 1:1594 (1315:1316) (Super)  
Codes: [Communication]

One heavily corroded/rusted acetylene gas cylinder is stored at the site. It is exposed to the elements and presents a safety threat

P 1: APPENDD2.txt - 1:1595 (1318:1319) (Super)  
Codes: [Communication]

A one-gallon can labeled "FLAMMABLE," contents unknown, is in a water-filled asphalt cart

P 1: APPENDD2.txt - 1:1597 (1326:1328) (Super)  
Codes: [Communication]

The new tank had been installed and shop personnel assumed it was labeled correctly; however, the words "used oil" were not present. A base-wide effort to properly label used oil was conducted, and this container was overlooked

P 1: APPENDD2.txt - 1:1598 (1330:1330) (Super)  
Codes: [Communication]

No MSDS was available for squalene, which was located on a shelf labeled "AW3."

P 1: APPENDD2.txt - 1:1599 (1332:1332) (Super)  
Codes: [Communication]

The conex used for temporary storage of ACMs is not properly labeled

P 1: APPENDD2.txt - 1:1600 (1334:1334) (Super)  
Codes: [Communication]

Personnel were trained as recently as 20 Mar 96 but still could not find MSDSs

P 1: APPENDD2.txt - 1:1604 (1346:1346) (Super)  
Codes: [Communication]

MSDSs were not located in the immediate work area



P 1: APPENDD2.txt - 1:1607 (1354:1355) (Super)  
Codes: [Communication]

The recovery system was recently modified, and a new drum had been installed. The drum should have been labeled hazardous, but this had not yet been done

P 1: APPENDD2.txt - 1:1608 (1357:1358) (Super)  
Codes: [Communication]

Transit panels stored in the asbestos conex, are not wrapped or bagged. The panels do not have the required labeling

P 1: APPENDD2.txt - 1:1610 (1362:1363) (Super)  
Codes: [Communication]

All other containers in the cabinet were properly labeled. Established procedures were not followed

P 1: APPENDD2.txt - 1:1628 (1417:1418) (Super)  
Codes: [Communication]

This is a new piece of equipment. Misunderstanding the equipment is certified for R-12 use by the manufacturer. However, it still requires certification with EPA

P 1: APPENDD2.txt - 1:1629 (1420:1420) (Super)  
Codes: [Communication]

Numerous non-regulated USTs had been registered with the state DOH

P 1: APPENDD2.txt - 1:1630 (1422:1423) (Super)  
Codes: [Communication]

AGE Shop had not submitted certification to the USEPA that it acquired certified recovery or recycling equipment

P 1: APPENDD2.txt - 1:1631 (1425:1426) (Super)  
Codes: [Communication]



Organization had not submitted certification to the USEPA that it has acquired certified recovery or recycling equipment

P 1: APPENDD2.txt - 1:1632 (1428:1430) (Super)  
Codes: [Communication]

An MVAC recover/recycle or recover equipment certification form is not being completed and submitted to the Stratospheric Ozone Protection Branch of the U.S. EPA for each piece of equipment

P 1: APPENDD2.txt - 1:1633 (1432:1433) (Super)  
Codes: [Communication]

CFC recovery equipment information for each piece of equipment is not being completed and submitted to the EPA

P 1: APPENDD2.txt - 1:1634 (1435:1439) (Super)  
Codes: [Communication]

40 CFR 63.468 (a) requires that operators of solvent cleaners containing 25% methylene chloride by weight submit an initial notification to the EPA no later than 29 Aug 1995. HQ CEMIRT, located in building 1134, has a 500-gallon solvent cleaner machine that contains DUNKIT carbonaceous soil and paint remover. The material contains 65% methylene chloride by weight and its operation should have been reported

P 1: APPENDD2.txt - 1:1635 (1446:1447) (Super)  
Codes: [Communication]

CEV Personnel believed that EPA Form 8700-12 had to be submitted along with the biannual report

---

Code: Coordination {10-1}

P 1: APPENDD2.txt - 1:1054 (1:2) (Super)  
Codes: [Coordination]



The plan is prepared by CEX and not coordinated through CEV; therefore, personnel may not be aware of all requirements

P 1: APPENDD2.txt - 1:1055 (4:5) (Super)  
Codes: [Coordination]

Base Bioenvironmental Engineers and Military Public Health are not notified prior to pesticide applications in the child development center, dining halls or commissary

P 1: APPENDD2.txt - 1:1056 (7:10) (Super)  
Codes: [Coordination]

When medicines are recalled from use, clinic supply personnel contact Bioenvironmental Engineering for approval of the disposal method (usually down the sink). There is no coordination with CEV to characterize the material prior to disposal to determine compliance with environmental requirement

P 1: APPENDD2.txt - 1:1079 (31:32) (Super)  
Codes: [Coordination]

Military Public Health is not receiving notification when contractor pest applications are done at the Officers Club, NCO Club, Golf Course, Lounge, and Bowling Lanes

P 1: APPENDD2.txt - 1:1392 (553:555) (Super)  
Codes: [Coordination]

Although the Pest Management Plan was finalized in July 95, it has not been coordinated with functions including Environmental Management, Bioenvironmental Engineering, Military Public Health and Natural Resources manager

P 1: APPENDD2.txt - 1:1400 (583:587) (Super)  
Codes: [Coordination]

The undated AFB Pest Management Plan lacks: (1) coordination with U.S. Fish & Wildlife Service (threatened species), installation Natural Resources manager, Military Public Health officer, and Bioenvironmental Engineer officer; (2)



Installation maps and narratives on sensitive wildlife habitat areas wetland and/or flood plains; (3) The ANG pest management activities; (4) Annual review notation; and (5) Pesticide labels and MSDSs

P 1: APPENDD2.txt - 1:1458 (816:817) (Super)  
Codes: [Coordination]

and provided the BEE a copy of the  
inventory without BEE input

P 1: APPENDD2.txt - 1:1473 (879:880) (Super)  
Codes: [Coordination]

The entomology services section of the Military Family Housing (MFH) maintenance contract was not reviewed or approved by the MAJCOM

P 1: APPENDD2.txt - 1:1507 (996:998) (Super)  
Codes: [Coordination]

The backflow program manager does not review all plans and drawings of new or modified water systems to identify potential cross-connections. Consequently, inappropriate devices have been installed at inappropriate locations

P 1: APPENDD2.txt - 1:1539 (1115:1117) (Super)  
Codes: [Coordination]

Materials found in a flammable cabinet are listed in the HAZMAT Book as inactive. The materials lacked container labels. The items appear to have been purchased by bypassing HAZMAT Pharmacy

---

Code: Documentation {32-1}

P 1: APPENDD2.txt - 1:1259 (161:163) (Super)  
Codes: [Documentation]



The manager was not aware of any leak detection system installed on the tanks or pipes. Annual tightness testing was conducted on the system, however there were no records of monthly inventory controls

P 1: APPENDD2.txt - 1:1288 (238:239) (Super)  
Codes: [Documentation]

Even though the drums were correctly labeled, the label must be visible for inspection as stated in the Base's HWMP

P 1: APPENDD2.txt - 1:1375 (488:489) (Super)  
Codes: [Documentation]

CEV received approval for its permit modification request, but did not ensure that all permit copies were updated

P 1: APPENDD2.txt - 1:1394 (561:561) (Super)  
Codes: [Documentation]

Some of the AF Forms 55 reviewed do not document HAZCOM training

P 1: APPENDD2.txt - 1:1399 (580:581) (Super)  
Codes: [Documentation]

Several shops were not documenting their HAZCOM training properly on AF Form 55 to show date of training

P 1: APPENDD2.txt - 1:1401 (589:589) (Super)  
Codes: [Documentation]

Documentation of HAZCOM training for workers was not available

P 1: APPENDD2.txt - 1:1405 (607:610) (Super)  
Codes: [Documentation]

Several items were omitted from the site map in the SWPC. These included: (a) past and present areas for outdoor storage or disposal of significant materials; (b) material loading and access areas; (c) where pesticides, herbicides, soil conditioners, and fertilizer are applied; and (d) only one of two underground injection wells was shown



P 1: APPENDD2.txt - 1:1407 (622:623) (Super)  
Codes: [Documentation]

AGE shop did not maintain servicing records for cooling equipment containing greater than 50 lbs. of coolant for three years or until the equipment is transferred to another organization

P 1: APPENDD2.txt - 1:1413 (650:650) (Super)  
Codes: [Documentation]

Daily inventory records were not kept on AF Form 500

P 1: APPENDD2.txt - 1:1416 (660:661) (Super)  
Codes: [Documentation]

A single fill log was used to account for two wastes accumulated in two different drums (used oil and aerosol cans)

P 1: APPENDD2.txt - 1:1417 (663:664) (Super)  
Codes: [Documentation]

The hazardous chemical inventory and Material Safety Data Sheet Book include all chemicals except Nickel Chloride and Boric Acid

P 1: APPENDD2.txt - 1:1419 (669:672) (Super)  
Codes: [Documentation]

The narrative statement on "Grease, Sand, Oil, or Grit Shipping Certification" in the recent Wastewater Discharge Semi-Annual Report (1/1/96 - 6/30/96) indicates that wastewater from the clean-out of oil/water separators was discharged to the sanitary sewer when in fact, there was no such discharge during the reporting period

P 1: APPENDD2.txt - 1:1424 (689:689) (Super)  
Codes: [Documentation]

Documentation on AF Form 55 was not current for all pesticide applicators



P 1: APPENDD2.txt - 1:1425 (691:692) (Super)  
Codes: [Documentation]

Conditional AO, dated Mar 86, lists three Zurn boilers and one Keeler boiler on site. Actual equipment on site are three Erie boilers and one Keeler boiler

P 1: APPENDD2.txt - 1:1428 (699:706) (Super)  
Codes: [Documentation]

The Phase II land disposal restrictions (LDRs) require that underlying hazardous constituents be identified for certain land-banned wastes to ensure complete and thorough treatment. A hazardous waste shipment on 14 December 1995 included a waste stream for which these requirements apply (waste solids with MEK and toluene). Although the LDR certifications were attached to the manifest, they were not completely filled in; identification of the underlying hazardous constituents is required for waste code D035. If analysis shows that there are no underlying hazardous constituents for that waste, code 248 should have been used to indicate that "none apply."

P 1: APPENDD2.txt - 1:1433 (718:718) (Super)  
Codes: [Documentation]

HAZCOM program not in required format per AFOSH STD 161-21 and AFBI 48-104

P 1: APPENDD2.txt - 1:1440 (747:749) (Super)  
Codes: [Documentation]

Some employee's AF Form 55 did not have required signatures indicating training had been accomplished. There were other minor documentation errors, and some program letters were obsolete

P 1: APPENDD2.txt - 1:1448 (782:785) (Super)  
Codes: [Documentation]

40 CFR 761.180(a) requires all facilities that use or store at least 45kg of PCBs to prepare an annual document log. Logs must be kept for at least three years. Manifests dated 9/16/92 and 6/4/93 indicate that 45kg of PCBs were shipped each time. These manifests show 45kg of PCBs in use or storage, which require annual documentation



P 1: APPENDD2.txt - 1:1449 (787:790) (Super)  
Codes: [Documentation]

The environmental staff has determined that dried tape and paper produced in the painting facility at Transportation are not hazardous waste. However, there is no analysis currently on file. 40 CFR 262.40(c) requires the facility to maintain all records documenting waste stream determinations for at least three years after the waste was last removed from the base

P 1: APPENDD2.txt - 1:1450 (792:794) (Super)  
Codes: [Documentation]

CEO personnel conduct scheduled and unscheduled inspections of an off-base landfill where refuse from the installation is disposed of by the contractor. However, these inspections are not documented

P 1: APPENDD2.txt - 1:1530 (1080:1080) (Super)  
Codes: [Documentation]

There are no MSDS sheets for sulfuric acid or masklenze MK-1 located in the acid cabinet

P 1: APPENDD2.txt - 1:1531 (1082:1085) (Super)  
Codes: [Documentation]

A waste container at the IAP in Molecular Biology Lab is labeled "HAZARDOUS WASTE – USAMRD 97002." The label does not include the common name of waste contained therein, the hazard designation or the AFB RCRA ID number. This information can be obtained from container log by matching container numbers

P 1: APPENDD2.txt - 1:1547 (1145:1146) (Super)  
Codes: [Documentation]

The storage cabinet specifically designated for storage of flammable materials was not conspicuously labeled "FLAMMABLE--KEEP FIRE AWAY."

P 1: APPENDD2.txt - 1:1550 (1153:1155) (Super)  
Codes: [Documentation]



A compressed gas cylinder (lecture bottle) containing methyl nitrite is labeled with its original label for oxygen. Two pieces of blue tape have been wrapped around the cylinder and labeled "Methyl Nitrite."

P 1: APPENDDD2.txt - 1:1553 (1163:1163) (Super)  
Codes: [Documentation]

There are no MSDS sheets for aerosol paint cans, gasoline, or diesel fuel

P 1: APPENDDD2.txt - 1:1554 (1165:1165) (Super)  
Codes: [Documentation]

There is no MSDS sheet for an aerosol spray can

P 1: APPENDDD2.txt - 1:1563 (1199:1200) (Super)  
Codes: [Documentation]

A 400-gal. AST located in the southwest corner of the Auto Skills facility does not have the required "Used Oil" label. Instead, it is labeled "Waste Oil."

P 1: APPENDDD2.txt - 1:1568 (1218:1219) (Super)  
Codes: [Documentation]

150-gal. sprayer trailer and three tractors are not marked "CONTAMINATED WITH PESTICIDES."

P 1: APPENDDD2.txt - 1:1574 (1241:1243) (Super)  
Codes: [Documentation]

The AST used to collect waste oil for this facility's heating system is labeled as "HAZARD WASTE -- WASTE OIL -- TOXIC." Tank should more properly be labeled as "REGULATED RECYCLABLE MATERIAL," since this site operates under a Recycling Permit

P 1: APPENDDD2.txt - 1:1586 (1293:1293) (Super)  
Codes: [Documentation]

13 CFC recovery units are not labeled in accordance with 40 CFR 82.158



P 1: APPENDD2.txt - 1:1596 (1321:1324) (Super)  
Codes: [Documentation]

A groundwater "pump and treat" system that operates in the field south of Pesticide Shop discharges backflush from the air stripper into a 275-gal. double-walled steel AST. This AST has a hazardous waste label that is badly weathered and illegible. A second label that may have been an NFPA diamond is also completely illegible

P 1: APPENDD2.txt - 1:1609 (1360:1360) (Super)  
Codes: [Documentation]

Isolated instance of personnel oversight. Other containers were properly labeled

---

Code: Financial Resource {1-1}

P 1: APPENDD2.txt - 1:1093 (38:40) (Super)  
Codes: [Financial Resource]

AETC/CEV had difficulty obtaining the funds. The HQ AETC/CEV personnel who assumed responsibility for completing the MAP schedule update just received adequate funding to complete the schedules

---

Code: Guidance {21-1}

P 1: APPENDD2.txt - 1:1065 (16:17) (Super)  
Codes: [Guidance]

AFB personnel had pursued this issue with HQ and thought that HQ had resolved the immediate problem

P 1: APPENDD2.txt - 1:1066 (19:20) (Super)  
Codes: [Guidance]

No Air Force or HQ guidance has been provided to the base level organization for dissemination to the general base offices

P 1: APPENDD2.txt - 1:1068 (25:26) (Super)



Codes: [Guidance]

No HQ Air Force or HQ affirmative procurement guidance has ever been distributed to the base level organizations

P 1: APPENDD2.txt - 1:1095 (44:45) (Super)

Codes: [Guidance]

No policies or procedures were in place to eliminate purchases of ozone depleting substances (ODS)

P 1: APPENDD2.txt - 1:1097 (48:48) (Super)

Codes: [Guidance]

There are no spill response procedures for the pesticide, storage/mixing area in Bldg

P 1: APPENDD2.txt - 1:1099 (51:52) (Super)

Codes: [Guidance]

No procedures were in place to train facility maintenance personnel on how their jobs impact the cultural resources management program

P 1: APPENDD2.txt - 1:1107 (82:83) (Super)

Codes: [Guidance]

The site-specific spill plans for hazardous materials storage areas have not been developed or incorporated into the basewide emergency response plan

P 1: APPENDD2.txt - 1:1110 (74:77) (Super)

Codes: [Guidance]

Nesting pairs of burrowing owls were disturbed and owls were flushed from abandoned prairie dog burrows by mowing equipment. The burrowing owl is a federal Candidate species and is protected by the State under the Migratory Bird Treaty Act. Currently, there is no basewide raptor survey or management plan to prevent this type of occurrence

P 1: APPENDD2.txt - 1:1216 (79:80) (Super)



Codes: [Guidance]

There is no management plan for threatened and endangered species for species and candidate species known to reside at AFB

P 1: APPENDD2.txt - 1:1233 (94:96) (Super)

Codes: [Guidance]

There were no procedures for discharging to the sanitary sewage system. Procedures must describe (a) pretreatment requirements, (b) discharge procedures, and (c) effluent limitations for industrial waste

P 1: APPENDD2.txt - 1:1234 (98:100) (Super)

Codes: [Guidance]

Radioactivity Analytical Laboratory only analyzes the samples they receive from off-base for radioactive characteristics and has no procedures to determine if samples have hazardous characteristics. The unused or analyzed samples are discarded to the solid waste

P 1: APPENDD2.txt - 1:1235 (102:102) (Super)

Codes: [Guidance]

A procedure for consolidating the permit files has not been established

P 1: APPENDD2.txt - 1:1294 (254:255) (Super)

Codes: [Guidance]

Personnel assumed the degree of hazard class or category would be the same as in the superseded AFM

P 1: APPENDD2.txt - 1:1302 (273:278) (Super)

Codes: [Guidance]

Drums of HW are stored on-site for over 90 days without proper authority. On the date of the inspection (28 Oct 96), there were three containers of hazardous waste with accumulation start dates of 29 July 96. As of this date, this waste was stored 91-92 days, depending on whether the initial date is counted as a day of storage. This illegal storage was caused by an incorrect assumption that 90 days



equals 3 months. A review of recent records revealed other instances of drums stored for 1 to 3 days over the 90-day time limit

P 1: APPENDD2.txt - 1:1306 (287:288) (Super)  
Codes: [Guidance]

Shop personnel were not aware that accepting the materials for resale could potentially require DRMO to manage them as hazardous waste

P 1: APPENDD2.txt - 1:1307 (290:291) (Super)  
Codes: [Guidance]

DRMO did not realize that accepting the materials for resale could potentially require them to take responsibility for disposal of the wastes

P 1: APPENDD2.txt - 1:1308 (293:294) (Super)  
Codes: [Guidance]

The personnel at T-1 Maintenance did not realize that they may be generating a hazardous waste

P 1: APPENDD2.txt - 1:1315 (34:34) (Super)  
Codes: [Guidance]

Personnel were unaware of requirement due to incorrect guidance from the contractor

P 1: APPENDD2.txt - 1:1457 (816:816) (Super)  
Codes: [Guidance]

Personnel in the AMUs assigned the "Degree of Hazard" based on dated guidance

P 1: APPENDD2.txt - 1:1467 (852:853) (Super)  
Codes: [Guidance]

CES/CC is required to appoint an engineer or appropriate supervisor as the Backflow Program Manager



P 1: APPENDD2.txt - 1:1490 (929:930) (Super)  
Codes: [Guidance]

The current procedure in CE Operational Instruction 19-3 was not specific enough in dealing with PCB spills and the required clean up procedures

---

Code: Human Resource {3-1}

P 1: APPENDD2.txt - 1:1092 (36:36) (Super)  
Codes: [Human Resource]

Lack of adequate resources (personnel) available to accomplish required update

P 1: APPENDD2.txt - 1:1094 (42:42) (Super)  
Codes: [Human Resource]

Lack of adequate resources (personnel) available to accomplish required update

P 1: APPENDD2.txt - 1:1368 (456:459) (Super)  
Codes: [Human Resource]

Bioenvironmental Engineering confirmed they have not completed a respirator fit test on a Guardsman with ANG. The AMDS/SGPB has sent notification of this testing requirement to ANG without response. ANG/EM reports that the Guardsman performs his duty only on weekends when AMDS/SGPB is not available

---

Code: Material Resource {5-1}

P 1: APPENDD2.txt - 1:1503 (983:985) (Super)  
Codes: [Material Resource]

Three different tractors and a Toro cart used for pesticide spraying do not carry emergency phone numbers or spill clean-up kits. None of the tractors or Toro carts have chemical-resistant panel

P 1: APPENDD2.txt - 1:1505 (989:990) (Super)  
Codes: [Material Resource]



The Cushman Cart and John Deere Tractor do not carry emergency phone numbers or spill clean-up kits. The Cushman Cart does not have a plastic bed liner or has chemical-resistant paint

P 1: APPENDD2.txt - 1:1522 (1057:1057) (Super)  
Codes: [Material Resource]

Although the drain is covered by a spill prevention mat, cross contamination occurred

P 1: APPENDD2.txt - 1:1526 (1069:1071) (Super)  
Codes: [Material Resource]

A tin household trash barrel is used to collect wood dust from the end of the chute connected to the cyclone outside on the south side of Bldg. The chute is not aligned exactly with, or tightly connected to, the barrel. This may result in fugitive particulate emissions during operation

P 1: APPENDD2.txt - 1:1566 (1210:1211) (Super)  
Codes: [Material Resource]

A spring-top receptacle marked as Hazardous Waste containing oily-contaminated rags, was left in the open position

---

Code: Misc {4-1}

P 1: APPENDD2.txt - 1:1255 (149:149) (Super)  
Codes: [Misc]

CEV personnel had a different interpretation of at or near

P 1: APPENDD2.txt - 1:1384 (524:525) (Super)  
Codes: [Misc]

Opacity readings are taken periodically and records are maintained but the problem has not been solved

P 1: APPENDD2.txt - 1:1385 (527:528) (Super)



Codes: [Misc]

The AAFES Service Station manager needs to make this finding a special interest item, due to this being a repeat finding from last year's inspection

P 1: APPENDD2.txt - 1:1518 (1042:1043) (Super)

Codes: [Misc]

The drums contained waste alodine rags (from 27 April, 1993 to 29 July, 1993) and photo waste (from 30 June, 1995 to 11 October, 1995)

---

Code: Notification {4-1}

P 1: APPENDD2.txt - 1:1057 (12:14) (Super)

Codes: [Notification]

The hazardous waste determination should have been communicated to shop personnel as soon as the determination was made. Potentially hazardous materials should be handled with care during determination procedures

P 1: APPENDD2.txt - 1:1067 (22:23) (Super)

Codes: [Notification]

The installation had received 22 letters of non-compliance in 1995, and 3 letters in 1996. None of these had been reported to HQ CEV as required

P 1: APPENDD2.txt - 1:1422 (682:685) (Super)

Codes: [Notification]

A locker next to Bldg is marked with the words "CORROSIVE WASTE." Inside the locker are lead acid batteries, NiCad, and lithium batteries. The battery locker has not been reported to AB/EM as part of the waste stream for the customer. There are no waste profiles, inspection records, or documentation of waste stream sources

P 1: APPENDD2.txt - 1:1636 (1441:1444) (Super)

Codes: [Notification]



Both the federal regulation (40 CFR 61.145) and the FAC Rule 62-257.301 require notification of intent to demolish or renovate structures containing regulated asbestos-containing materials. This notification must be received by the FDEP, the States Asbestos Coordinator, the department's district office, and local air programs ten days prior to the start of demolition

---

Code: Performance {90-3}

P 1: APPENDD2.txt - 1:1101 (56:57) (Super)  
Codes: [Performance]

The installation's Environmental Leadership Council has no group which reviews NEPA documents

P 1: APPENDD2.txt - 1:1102 (59:59) (Super)  
Codes: [Performance]

CE has not developed or published a Base Comprehensive Plan

P 1: APPENDD2.txt - 1:1103 (61:62) (Super)  
Codes: [Performance]

AFB does not have a Pollution Prevention Management Plan as required by AFI 32-7080, para 2.2

P 1: APPENDD2.txt - 1:1104 (64:64) (Super)  
Codes: [Performance]

There was no written Hazard Communication program for the AGE flight

P 1: APPENDD2.txt - 1:1105 (66:66) (Super)  
Codes: [Performance]

This installation has no composting program, as required by AFI 32-7080

P 1: APPENDD2.txt - 1:1106 (69:70) (Super)  
Codes: [Performance]

Map products are not being  
updated annually



P 1: APPENDD2.txt - 1:1109 (71:72) (Super)  
Codes: [Performance]

Sentel does not have a written hazard communication program

P 1: APPENDD2.txt - 1:1232 (85:86) (Super)  
Codes: [Performance]

The installation has not published their supplement to AFI 32-7041, Water Quality Compliance, as part of the installation's water quality compliance program

P 1: APPENDD2.txt - 1:1314 (170:171) (Super)  
Codes: [Performance]

Maintenance personnel would not be aware of pump failure if there was a power outage. This could cause sewage backup and potential overflow

P 1: APPENDD2.txt - 1:1319 (153:155) (Super)  
Codes: [Performance]

Because this waste is generated in extremely small quantities, establishing individual points is impractical. This management operation is subject to interpretation policy is to seek approval

P 1: APPENDD2.txt - 1:1323 (178:178) (Super)  
Codes: [Performance]

Personnel had not identified these wastes as hazardous

P 1: APPENDD2.txt - 1:1335 (326:330) (Super)  
Codes: [Performance]

A roofing repair contractor has a lay-down area located outside of building which is used to store equipment, materials, and wastes. The operation uses several solvents (naphtha, mineral spirits, and paint thinner) and collects the cans for disposal. Because not all of the containers were empty, they were



rejected by the local solid waste landfill, and the contractor is storing them in the open where they collect rainwater and rust

P 1: APPENDD2.txt - 1:1336 (332:336) (Super)  
Codes: [Performance]

Installation Restoration Program (IRP) wastes (presumed non-hazardous) were left on site following the completion of removal action at the Runway Dump. Contractor who conducted the removal action is required to remove the waste. Wastes left on site consisted of approximately twenty 55-gallon drums, and approximately twelve "super sacks" containing plastic scraps and personal protective garments

P 1: APPENDD2.txt - 1:1337 (338:338) (Super)  
Codes: [Performance]

The Natural Resource Manager has not received the required three-year renewal for training

P 1: APPENDD2.txt - 1:1341 (349:353) (Super)  
Codes: [Performance]

Waste oil being accumulated in a 500 gal. UST is removed monthly by a local hauler for delivery to an off-site waste oil reclaimer. Since MIT/LL does not hold an MA class B(3) recycling permit, the waste must be managed as hazardous waste (310 CMR 30.211). The supervisor has had no hazardous waste training commensurate with his responsibilities. In addition, the tank is not marked with the words "HAZARDOUS WASTE."

P 1: APPENDD2.txt - 1:1342 (355:356) (Super)  
Codes: [Performance]

Two grounds maintenance people are applying weed and feed type materials and diazinon insecticide. Their DoD pesticide applicator certificates expired in 1990 and 1991

P 1: APPENDD2.txt - 1:1343 (358:359) (Super)  
Codes: [Performance]



The IAP manager has monthly inspection logs not weekly. In addition, IAP manager has not received annual refresher training (last trained 5/95)

P 1: APPENDD2.txt - 1:1344 (361:365) (Super)  
Codes: [Performance]

Base Asbestos Program Officer (BAPO) is required to have certain training as identified in the AFB Asbestos Management and Operations Plan. The BAPO has not received some of the training (Design training) nor was he aware that he should be receiving this training IAW the plan. He was aware of the a portion of the PPE requirement (respirator) and has received the necessary medical clearance, but not the fit test and training

P 1: APPENDD2.txt - 1:1346 (370:373) (Super)  
Codes: [Performance]

PCB construction employees (Housing Maintenance) have not received HAZCOM training (CES/CEH). AF 55s are not documented with HAZCOM training (TRNS/Allied Trades). Site-specific hazard communication is not being accomplished. OSHA hazard communication training documents cannot be produced

P 1: APPENDD2.txt - 1:1348 (378:379) (Super)  
Codes: [Performance]

IAP managers throughout the ABW lack current and initial training for hazardous waste management

P 1: APPENDD2.txt - 1:1349 (381:383) (Super)  
Codes: [Performance]

Personnel were appointed as satellite accumulation point manager and alternate effective 3 Feb 96. However, they did not receive their initial hazardous waste management training until May and October

P 1: APPENDD2.txt - 1:1352 (393:395) (Super)  
Codes: [Performance]



Personnel working in the entomology shop must either be certified for pesticide application and management or must work under the supervision of a certified applicator. Currently there is an insufficient number of certified personnel

P 1: APPENDD2.txt - 1:1354 (401:403) (Super)  
Codes: [Performance]

AFOSH Standard 161-21 describes the requirements to document work place specific hazard communication training and FHCTP on AF Forms 55. Procedures are in place. Most supervisors knew that the training needed to be documented but had not yet done it

P 1: APPENDD2.txt - 1:1356 (408:410) (Super)  
Codes: [Performance]

Remaining open from the 1993 External ECAMP, Bldg continues to be the storage area for herbicides. Bldg lacks a containment barrier

P 1: APPENDD2.txt - 1:1357 (412:413) (Super)  
Codes: [Performance]

The base has researched the issues related to the Clean Water Act that are associated with this discharge, but has not yet reviewed potential impacts associated with RCRA

P 1: APPENDD2.txt - 1:1358 (415:418) (Super)  
Codes: [Performance]

Remaining open from the 1991 Internal and the 93 External, mixing is done along the fence in an open area and drainage was running down the road berm. Tractors and Toro cart are not decontaminated and are stored in the open on a gravel area within the maintenance compound. A 150-gal. spray unit was leaking oil (from its pumping system) onto the gravel

P 1: APPENDD2.txt - 1:1359 (420:423) (Super)  
Codes: [Performance]



Carried forward from the 1995 ECAMP, installations are required to establish a natural resources management database to track program progress. The current database is located in the Conservation Module of WIMS-ES. AFB has not entered their information into the database

P 1: APPENDD2.txt - 1:1363 (435:436) (Super)  
Codes: [Performance]

Remaining open from the 1991 Internal ECAMP, 1993 External and 1994 Internal, approximately 68% of all occupied facilities have been surveyed to determine the presence of ACM

P 1: APPENDD2.txt - 1:1364 (443:445) (Super)  
Codes: [Performance]

Remaining open from the 1993 External ECAMP, there is no secondary containment at any fuel transfer facilities within the Bulk Fuels Facility, including the JP-8 loading header, two JP-8 fillstands, diesel and MOGAS loading header, two diesel and MOGAS fillstands

P 1: APPENDD2.txt - 1:1367 (452:454) (Super)  
Codes: [Performance]

Remaining open from the 1993 External ECAMP, herbicides and insecticides are stored in same room (facility). A hot water shower for personal decontamination of pesticide applicator is not available at the ANG CE Compound

P 1: APPENDD2.txt - 1:1370 (465:466) (Super)  
Codes: [Performance]

This finding was originally identified in the 1994 external ECAMP. There is no spill containment facility at the truck fill stand and off-loading areas in the POL bulk storage area near Bldg

P 1: APPENDD2.txt - 1:1371 (468:471) (Super)  
Codes: [Performance]

Carried forward from the 1993 External ECAMP, 1994 Internal ECAMP and 1995 Internal ECAMP. The solid waste transfer station is being operated without a



permit as required by state law. Site assessment has been approved by the town. Application for both construction and operating permits was turned into the State on 16 May 96

P 1: APPENDD2.txt - 1:1372 (473:476) (Super)  
Codes: [Performance]

Repeat finding from 1995 Internal ECAMP. Evidence of open dumping existed at numerous locations: (a) adjacent to Beach (green waste); (b) throughout the scrub-brush around the facilities; (c) across from the golf course. A finding for Unpermitted Dump Site in the 1995 Internal ECAMP evaluation had been reported as closed in the Management Action Plan

P 1: APPENDD2.txt - 1:1373 (478:480) (Super)  
Codes: [Performance]

Carried forward from the 1996 Internal ECAMP, the open grates at the Military Car Wash allow storm water to enter the sanitary sewer system. This is inconsistent with the City industrial wastewater agreement

P 1: APPENDD2.txt - 1:1374 (482:486) (Super)  
Codes: [Performance]

Repeat finding from the 1994 External ECAMP. The drainage ditch along Road is being stripped of all trees and other vegetation leaving the soil bare. Because the ditch is scheduled to be re-contoured and re-seeded in April 1997, there is potential for erosion which could become a non-point source of pollution in the interim. Although this condition is different from 1994, erosion control considerations pertaining to Ditch are still difficult

P 1: APPENDD2.txt - 1:1381 (510:513) (Super)  
Codes: [Performance]

Remaining open from the 1991 External ECAP, there are no backflow prevention devices installed on the Water min that supplies water to Laboratory, Tech Area III, the fire protection deluge system and the area. A sanitary survey of the water supply system conducted by the State on 17-18 Ma 1988



P 1: APPENDD2.txt - 1:1383 (518:522) (Super)  
Codes: [Performance]

Carried forward from the 1993 External ECAMP and the 1996 Internal ECAMP. There is no containment system at the AAFES service station. Tank filling by commercial tank truck is located approximately 10' from two storm drains and an open roadway. Traffic is not stopped while filling operations are in progress. In the event of spill, the contents of the tanker truck would flow directly into the storm drain system

P 1: APPENDD2.txt - 1:1406 (612:620) (Super)  
Codes: [Performance]

To avoid management under hazardous waste requirements of 40 CFR 262, Subpart C (accumulation point and satellite accumulation point requirements), the operator of this incinerator must comply with the requirements of 40 CFR 266.70, including 40 CFR 262, Subpart B (manifest requirements). That regulation requires the operator to maintain records showing (1) the volume of the materials stored at the beginning of the year, (2) the amount of materials generated or received during the calendar year, and (3) the amount of materials remaining at the end of the calendar year. Subpart B of 262 requires the generator to meet all the usual HW manifest requirements. Also noted during the inspection was that drums of waste ash were left uncovered allowing the ash to be illegally released into the surrounding environment

P 1: APPENDD2.txt - 1:1409 (628:635) (Super)  
Codes: [Performance]

To avoid management of waste X-ray film under hazardous waste requirements of 40 CFR 262, Subpart C (accumulation point and satellite accumulation point requirements), the operator of this area must comply with the requirements of 40 CFR 266.70, including 40 CFR 262, Subpart B (manifest requirements). That regulation requires the operator to maintain records showing (1) the volume of the materials stored at the beginning of the year, (2) the amount of materials generated or received during the calendar year, and (3) the amount of materials remaining at the end of the calendar year. Subpart B of 262 requires the generator to meet all the usual HW manifest requirements

P 1: APPENDD2.txt - 1:1412 (645:648) (Super)  
Codes: [Performance]



40 CFR 60.113 b(a)(3)(i) and FDEP permit A003-178743 require that the seals of internal floating roof storage tanks storing volatile organic liquids be inspected at least every five years. This requirement is applicable to Tank 405, which was constructed in 1985. Records do not show that this inspection was performed

P 1: APPENDD2.txt - 1:1429 (708:708) (Super)  
Codes: [Performance]

Form submitted but release detection methods not accurate

P 1: APPENDD2.txt - 1:1437 (736:737) (Super)  
Codes: [Performance]

The plan has been under review for approximately one year. The plan is currently being revised

P 1: APPENDD2.txt - 1:1438 (739:739) (Super)  
Codes: [Performance]

Although the NOR is well maintained, this segment has not been recently reviewed

P 1: APPENDD2.txt - 1:1451 (796:797) (Super)  
Codes: [Performance]

The Hazardous Waste Monitor did not perform weekly inspections on two occasions during June, July, and August

P 1: APPENDD2.txt - 1:1454 (806:806) (Super)  
Codes: [Performance]

Personnel were aware of the requirement but failed to secure the fill lines

P 1: APPENDD2.txt - 1:1455 (808:810) (Super)  
Codes: [Performance]

Piles of soil mixed with scrap metal and demolition debris are dumped along the side of Perimeter Road. Landfill inspections are not being conducted. The Solid Waste contract manager is not sure where waste is being disposed



P 1: APPENDD2.txt - 1:1459 (819:820) (Super)  
Codes: [Performance]

Two precautions for preventing a spill from entering the storm sewer area prescribed in the Contingency Plan, but only one is being employed

P 1: APPENDD2.txt - 1:1461 (827:829) (Super)  
Codes: [Performance]

The base landfill only accepts Construction Debris. The operating personnel are not placing cover material at the end of each operating day. They have had debris in landfill for three weeks without covering

P 1: APPENDD2.txt - 1:1462 (831:833) (Super)  
Codes: [Performance]

Lead and copper sampling is not accomplished according to the required schedule. Medium-sized water systems are required to sample between July 1 -- December 31 of each calendar year. 1995 and 1996 Lead and Copper sampling was performed between Jan 1 and June 30 of each year

P 1: APPENDD2.txt - 1:1464 (839:841) (Super)  
Codes: [Performance]

Severe erosion has occurred on the west side of Bldg subsequent to its construction. No vegetative cover has been established leading to gully erosion and discharge of sediments to the River

P 1: APPENDD2.txt - 1:1465 (843:847) (Super)  
Codes: [Performance]

The CEMIRT generator shop conducts several industrial operations that produce potentially hazardous wastes, though they have not been identified as hazardous wastes. These include waste bead blast media, waste fuel filters, paint waste drained from crushed aerosol cans, and solvents and sludge from the carbon remover degreaser. Hazardous waste determinations must be made on each of these waste streams

P 1: APPENDD2.txt - 1:1472 (868:877) (Super)



Codes: [Performance]

According to the AFI referenced below, all base waste streams regulated under RCRA must be re-evaluated periodically for presence of hazardous constituents. Base has approximately one dozen waste streams in this category (e.g., paint sludge, MEK solvent, sand-blast media, used oil, etc.). Large volume waste streams in this category must be re-evaluated annually, and small volume streams every three years. The majority of base waste streams have not been tested in strict compliance with this schedule, although all have been tested at least once in the last five years except for parts washers. The status of parts washers is currently in flux due to on-going conversion (see Finding HW-013). In the past, parts washer solvents were handled by contractors, however, the base is converting to newer systems that will not be contractor maintained, thereby creating additional waste streams requiring periodic re-evaluation

P 1: APPENDD2.txt - 1:1475 (884:885) (Super)

Codes: [Performance]

Large dirt piles on the construction site lack erosion control. Straw bales placed at storm drains are deteriorated and insufficient

P 1: APPENDD2.txt - 1:1480 (899:899) (Super)

Codes: [Performance]

Personnel failed to follow established procedures for waste disposal

P 1: APPENDD2.txt - 1:1483 (907:908) (Super)

Codes: [Performance]

Personnel were aware of the tank tightness testing req. However, due to the installation of new UST, testing wasn't completed on existing USTs

P 1: APPENDD2.txt - 1:1484 (910:910) (Super)

Codes: [Performance]

Personnel failed to follow established procedures for waste disposal

P 1: APPENDD2.txt - 1:1485 (912:914) (Super)

Codes: [Performance]



The Hazardous Waste Management Plan and the Satellite Accumulation Point Inspection Form instruct Point Managers to conduct daily inspections. However, inspections are only performed weekly

P 1: APPENDD2.txt - 1:1486 (916:916) (Super)  
Codes: [Performance]

Base not providing required data

P 1: APPENDD2.txt - 1:1488 (922:923) (Super)  
Codes: [Performance]

Brush and tree trimmings, trash, and scrap metal are being dumped at a landfill posted as closed. Trash dumped as late as August of 96 (newspaper Aug '96)

P 1: APPENDD2.txt - 1:1491 (932:936) (Super)  
Codes: [Performance]

Three two-gal. containers of waste materials (i.e., adhesive) and several partially full aerosol cans (i.e., ship-to-shore containing 1,1,1-trichloroethane) are being stored in a small containment tray by a small building in open storage. No labels as hazardous waste or waste material; not a designated IAP, no hazard labels on some, no inspection logs, etc. The waste is turned in from various custodians throughout the base

P 1: APPENDD2.txt - 1:1492 (938:939) (Super)  
Codes: [Performance]

Boilers #1 and #3 exceeded the 145-gal./hr/burner in Feb 96, which is the conditional AO limitation

P 1: APPENDD2.txt - 1:1508 (1000:1001) (Super)  
Codes: [Performance]

Partially empty containers of degreasers, floor stripper, Trane 22 refrigerant oil, and scrap metal exist in the roll-off container at the southeast corner

P 1: APPENDD2.txt - 1:1516 (1036:1037) (Super)  
Codes: [Performance]



The existing trash collection container was full and overflowing. This condition contributes to problems with rats and other vectors on AFB

P 1: APPENDD2.txt - 1:1525 (1066:1067) (Super)  
Codes: [Performance]

If the recovery system does produce reusable Alodine, current procedures are adequate for the unit

P 1: APPENDD2.txt - 1:1532 (1087:1089) (Super)  
Codes: [Performance]

A 3,000 gal. aboveground storage tank is abandoned in the Auto Hobby Shop Storage Lot behind Bldg. The tank has been in this location for numerous years (10+) according to the shop foreman. The tank's manhole is open. The tank contains liquid of unknown origin

P 1: APPENDD2.txt - 1:1533 (1091:1093) (Super)  
Codes: [Performance]

Drums of silver ash were stored in open containers in the vicinity of the processor. Ash was noted around the pad and soils of the processor which may be high in silver contaminates above hazardous waste standard. If this situation exists, it may require extensive site clean-up

P 1: APPENDD2.txt - 1:1551 (1157:1159) (Super)  
Codes: [Performance]

One compressed gas cylinder of oxygen is stored on its side. Oxygen and acetylene cylinders are stored together on a welding cart. Neither is equipped with a regulator and neither meets the condition of "connected for use."

P 1: APPENDD2.txt - 1:1555 (1167:1168) (Super)  
Codes: [Performance]

Sulfuric acid is co-stored with other mineral acids and required segregation is not maintained within the acid cabinet



P 1: APPENDD2.txt - 1:1556 (1170:1171) (Super)  
Codes: [Performance]

In various locations throughout the Analytical Services laboratory, sulfuric acid is co-stored with other mineral acids and required segregation is not maintained

P 1: APPENDD2.txt - 1:1601 (1336:1337) (Super)  
Codes: [Performance]

Corrosive and flammable materials stored together in a flammable storage locker located under a work bench

P 1: APPENDD2.txt - 1:1602 (1339:1340) (Super)  
Codes: [Performance]

Lecture Bottles (small compressed gas cylinders) containing oxidizers and flammable materials are stored together under the lab hood

P 1: APPENDD2.txt - 1:1603 (1342:1344) (Super)  
Codes: [Performance]

Corrosive and flammable materials were stored together in a flammable storage building. Bleach (sodium hypochloride) stored with flammable materials in an outside storage area. Ammonium hydroxide was stored with flammable materials

P 1: APPENDD2.txt - 1:1605 (1348:1349) (Super)  
Codes: [Performance]

Three small nitrogen cylinders were unsecured. They were located in the oxygen, oxygen aviator, and nitrogen full-cylinder storage area

P 1: APPENDD2.txt - 1:1606 (1351:1352) (Super)  
Codes: [Performance]

Oxygen and acetylene gas cylinders are not sufficiently secured and could fall or rupture. Flammable gases and oxidizers should be segregated by the hazard classification of the gas



P 1: APPENDD2.txt - 1:1612 (1368:1370) (Super)  
Codes: [Performance]

Three compressed gas cylinders of nitrogen are laying on the floor in the boiler house (near the burners). These cylinders are reported to have been left by the contractor who was refurbishing the chillers at the heating plant

P 1: APPENDD2.txt - 1:1613 (1372:1377) (Super)  
Codes: [Performance]

The secondary containment drain valves at Bldgs were not locked. The fill ports and secondary containment drain valves for three tanks at Bldg 3004 were not locked. The gauging hatch, fill port, low point drain, and secondary containment drain valve were not locked at Bldg. The gauging hatch, fill port and low point drain were not locked at Bldg. The low point drain and the secondary containment drain valves were not locked at Bldg Type O Incinerator; in addition, the containment drain valve was left open

P 1: APPENDD2.txt - 1:1614 (1379:1379) (Super)  
Codes: [Performance]

The fill-line and gauging port were not locked

P 1: APPENDD2.txt - 1:1615 (1381:1381) (Super)  
Codes: [Performance]

The secondary containment drain valve was not locked

P 1: APPENDD2.txt - 1:1616 (1383:1384) (Super)  
Codes: [Performance]

The remote fill-lines and the gauging ports were not locked. Only the primary fill-lines were secured

P 1: APPENDD2.txt - 1:1617 (1386:1387) (Super)  
Codes: [Performance]

The sink in the pesticide mixing room does not have a reduced pressure backflow prevention device



P 1: APPENDD2.txt - 1:1618 (1389:1389) (Super)  
Codes: [Performance]

The AST at the facility did not have secondary containment

P 1: APPENDD2.txt - 1:1619 (1391:1391) (Super)  
Codes: [Performance]

The truck fill stands at Bldgs did not have any secondary containment system

P 1: APPENDD2.txt - 1:1620 (1393:1393) (Super)  
Codes: [Performance]

The circulation pit did not have any secondary containment system

P 1: APPENDD2.txt - 1:1621 (1395:1397) (Super)  
Codes: [Performance]

Unlocked tanks can become contaminated by vandalism or inadvertent receipt of the wrong product due to insufficient key control. Unlocked dike drains could allow inadvertent release of POL product to the environment

P 1: APPENDD2.txt - 1:1622 (1399:1401) (Super)  
Codes: [Performance]

Several spent lead acid batteries are stored on wooden tables in these buildings. Spill prevention measures are inadequate. Awaiting pickup for reclamation, the batteries have been stored a long time and there is no contract in-place

P 1: APPENDD2.txt - 1:1623 (1403:1405) (Super)  
Codes: [Performance]

The temporary AST was not properly secured, did not have secondary containment, and did not have appropriate tank markings. In addition, the tank was set up as both an issue and support tank

P 1: APPENDD2.txt - 1:1624 (1407:1408) (Super)  
Codes: [Performance]



The spill containment area at the fuel fill stand and off-loading areas in the 400 area is cracked

P 1: APPENDD2.txt - 1:1625 (1410:1410) (Super)  
Codes: [Performance]

The drain valve was locked and closed, but did not ensure it could not be bypassed

P 1: APPENDD2.txt - 1:1626 (1412:1412) (Super)  
Codes: [Performance]

The secondary containment drain valve was not properly locked, and was open

P 1: APPENDD2.txt - 1:1627 (1414:1415) (Super)  
Codes: [Performance]

The fill port for the 1,000-gal. #2 fuel oil AST east of Bldg is not secured. The building owned by the Army Reserve is not now occupied

---

Code: Resource {5-4}

P 1: APPENDD2.txt - 1:1098 (48:49) (Super)  
Codes: [Resource]

Spill kit (absorbent materials)  
for spill containment and clean-up are not available at the storage site

P 1: APPENDD2.txt - 1:1517 (1039:1040) (Super)  
Codes: [Resource]

The 7-cubic yard dumpsters were not adequate to contain all green waste generated in the housing areas on the installation

P 1: APPENDD2.txt - 1:1521 (1053:1055) (Super)  
Codes: [Resource]



The infectious waste dumpster was full of plastic bags containing sharps and other infectious waste. Closure of the dumpster lid was compacting the bags of waste, increasing the possibility of breaking a bag open

P 1: APPENDD2.txt - 1:1544 (1134:1137) (Super)  
Codes: [Resource]

Ash containers did not have lids on them permitting the ash to scatter to adjacent soils by wind action. Safety equipment provided was in poor condition, i.e. face piece of the fire fighters hood was severely scratched making it difficult to see through, hood and jacket had insect droppings, and gloves were in poor condition

P 1: APPENDD2.txt - 1:1584 (1286:1288) (Super)  
Codes: [Resource]

Insecticides are being stored directly on a concrete, exterior, mixing pad and covered with a tarp. The Interior storage area is not available due to modifications to upgrade the substandard storage facility

---

Code: Training {37-1}

P 1: APPENDD2.txt - 1:1070 (28:29) (Super)  
Codes: [Training]

Base personnel lacked sufficient understanding and guidance on methods to determine local interest in the formation of a RAB

P 1: APPENDD2.txt - 1:1096 (45:46) (Super)  
Codes: [Training]

The Hazardous Material Pharmacy ODS manager had not developed a strategy to phase out Class 1 ODS purchases

P 1: APPENDD2.txt - 1:1100 (52:54) (Super)  
Codes: [Training]



Training needed to be initiated to ensure CES personnel, self-help workers, and contractors are aware of the impact of their activities on cultural resources

P 1: APPENDD2.txt - 1:1236 (104:105) (Super)  
Codes: [Training]

Unaware of requirements to report recycling metrics, encompassing installation of a single qualified recycling program

P 1: APPENDD2.txt - 1:1237 (107:107) (Super)  
Codes: [Training]

Individual was not aware of requirement to register equipment with EPA

P 1: APPENDD2.txt - 1:1238 (125:126) (Super)  
Codes: [Training]

The base typically marks items for recycle with the appropriate information, but had not considered that fluorescent light bulbs are also subject to this management requirement

P 1: APPENDD2.txt - 1:1249 (157:157) (Super)  
Codes: [Training]

Pesticide personnel are not aware of the Air Force regulations governing pesticide usage

P 1: APPENDD2.txt - 1:1251 (140:140) (Super)  
Codes: [Training]

Personnel did not know the exact requirements for historic preservation

P 1: APPENDD2.txt - 1:1252 (142:142) (Super)  
Codes: [Training]

Personnel are not fully aware of storm water discharge permit requirements

P 1: APPENDD2.txt - 1:1256 (151:151) (Super)  
Codes: [Training]



Engineers did not understand the question "environmental project (y/n)" in the PCMS

P 1: APPENDD2.txt - 1:1258 (159:159) (Super)  
Codes: [Training]

Personnel were not aware of the AFI requirement

P 1: APPENDD2.txt - 1:1261 (168:168) (Super)  
Codes: [Training]

Personnel not aware of requirement to secure tank drains

P 1: APPENDD2.txt - 1:1265 (184:184) (Super)  
Codes: [Training]

Personnel were not aware of the requirement in the AFI

P 1: APPENDD2.txt - 1:1266 (182:182) (Super)  
Codes: [Training]

Personnel unaware of NFPA Requirement

P 1: APPENDD2.txt - 1:1295 (257:258) (Super)  
Codes: [Training]

Personnel at the Transportation Shop believed that the facility's new oil filter crusher met the regulatory requirements of hot-draining

P 1: APPENDD2.txt - 1:1296 (260:261) (Super)  
Codes: [Training]

Although the operator understood that records are required, he did not understand the purpose of the records or what they needed to include

P 1: APPENDD2.txt - 1:1297 (263:263) (Super)  
Codes: [Training]

Personnel did not recognize reducing ignitability as treatment

P 1: APPENDD2.txt - 1:1299 (267:267) (Super)  
Codes: [Training]



Personnel were unaware that these materials were incompatible

P 1: APPENDD2.txt - 1:1301 (271:271) (Super)

Codes: [Training]

Personnel did not consider the fuel filters as hazardous

P 1: APPENDD2.txt - 1:1303 (280:280) (Super)

Codes: [Training]

Personnel were not aware that hazard warnings were needed on each container

P 1: APPENDD2.txt - 1:1304 (282:282) (Super)

Codes: [Training]

Personnel did not know that containers must be tightly sealed

P 1: APPENDD2.txt - 1:1305 (284:285) (Super)

Codes: [Training]

Because latex paints, which are not hazardous wastes, are allowed to be dried, shop personnel did not understand that non-latex paints require a different management approach

P 1: APPENDD2.txt - 1:1309 (296:297) (Super)

Codes: [Training]

The shop collects waste fuel as a hazardous waste, but had not considered that the filters would also be hazardous

P 1: APPENDD2.txt - 1:1310 (299:300) (Super)

Codes: [Training]

The Auto Hobby Shop has a hazardous waste management program, but had not considered that the fuel filters might be hazardous waste

P 1: APPENDD2.txt - 1:1321 (173:173) (Super)

Codes: [Training]



Personnel were unaware that use of paint thinners should be recorded in the logbook

P 1: APPENDD2.txt - 1:1322 (175:176) (Super)  
Codes: [Training]

Personnel were unaware that the lid must remain closed when the degreaser is not being used and that an instructional sign must be posted

P 1: APPENDD2.txt - 1:1324 (180:180) (Super)  
Codes: [Training]

Personnel were unaware that an instructional sign must be posted

P 1: APPENDD2.txt - 1:1327 (302:303) (Super)  
Codes: [Training]

Personnel thought the requirement only applied to the Air Force definition of PCB containing items (transformers and capacitors)

P 1: APPENDD2.txt - 1:1328 (305:306) (Super)  
Codes: [Training]

Personnel did not feel that a sufficient volume of fuel was collected to merit managing an IAP

P 1: APPENDD2.txt - 1:1329 (308:309) (Super)  
Codes: [Training]

Personnel assumed a "worst case" sample would satisfy disposal method requirements for the remaining oil/water separators on the base

P 1: APPENDD2.txt - 1:1330 (311:312) (Super)  
Codes: [Training]

The lab staff did not fully understand that the accumulation point at the gram stain area was, in itself, a satellite accumulation point

P 1: APPENDD2.txt - 1:1332 (317:318) (Super)



Codes: [Training]

Person unaware of waiver requirement. Boiler plate statement of Ozone Depleting Substances not in contract

P 1: APPENDD2.txt - 1:1351 (388:391) (Super)

Codes: [Training]

Facility personnel who handle hazardous waste are required to complete initial hazardous waste training within six months of employment and refresher training on an annual basis thereafter. Personnel in several different shops have not had the required hazardous waste training (initial or refresher). These shops include: Munitions, Corrosion Control, Electrical

P 1: APPENDD2.txt - 1:1361 (429:430) (Super)

Codes: [Training]

The hazardous waste determination had been conducted, but the results had not been properly applied

P 1: APPENDD2.txt - 1:1477 (890:891) (Super)

Codes: [Training]

The base is recycling the cans but the shop needs to ensure that all useable material is eliminated before recycling

P 1: APPENDD2.txt - 1:1487 (918:920) (Super)

Codes: [Training]

Approximately 12 light fixtures with high-pressure sodium type bulbs were disposed of in a solid waste dumpster. This type of light bulb contains mercury and should be disposed of as a hazardous waste

P 1: APPENDD2.txt - 1:1611 (1365:1366) (Super)

Codes: [Training]

The filters were abandoned at the lay down area by contractors who lacked adequate training regarding waste accumulation, storage, and disposal



## Appendix B: Case Study Two

Code: Communication {115-6}

P 1: Base Findings Data.txt - 1:2 (9:13) (Super)  
Codes: [Communication]

The control panel that controls the inventory, leak detection, and high level alarm is inoperable. Additionally, the alarm for this system is not located so as to allow the high-level alarm to be heard by the truck fill operator. Leak detection is required by 40 CFR 280.41 to 280.43. There seemed to be confusion between the Clinic and CE as to who was to manage the system

P 1: Base Findings Data.txt - 1:35 (178:183) (Super)  
Codes: [Communication]

The mixing room and the flammable storage area is a continuous space with the drive-in paint booth. The two areas can be separated by a large overhead bay door. However, the door is always raised to allow visual contact between a painter and someone outside the paint booth for safety reasons. This extends the spray paint operation into the mixing room. OSHA [29 CFR 1910.107(c)] prohibits more than one day's storage of flammable materials in a spray paint area

P 1: Base Findings Data.txt - 1:44 (224:231) (Super)  
Codes: [Communication]

The Air National Guard operates a small booth for painting aircraft parts. Exhaust filters in the booth were observed to be heavily coated with paint overspray during the assessment and personnel indicated that the filters had not been changed in over a year. Since the manufacturer's recommended point of changeout has not been reached yet according to the manometer, personnel have not changed the filters. However, it is suspect as to whether or not the manometer is working properly or the manufacturer has properly assessed when changeout should occur. Excessive buildup on the face of the filters can lead to abnormally low exhaust flowrates and eventual breakthrough of the filter material

P 1: Base Findings Data.txt - 1:52 (269:273) (Super)



Codes: [Communication]

The base has registered its degreasers under Standard Exemption No. 107. There are a number of degreasers that have been removed as well as a degreaser added (Building 5275). Although registration may not be required, the base should update the existing registration to accurately reflect the current situation. Additionally, a review of required posted operating instructions for all existing and newly acquired degreasers should occur to ensure compliance

P 1: Base Findings Data.txt - 1:55 (284:287) (Super)

Codes: [Communication]

Diesel fuel filters are being managed as hazardous waste based on an assumption that they contain benzene. These filters are not likely to be hazardous as diesel typically does not contain benzene. A hazardous waste characterization should be accomplished with the goal of removing these filters from the hazardous waste stream inventory

P 1: Base Findings Data.txt - 1:56 (289:295) (Super)

Codes: [Communication]

The bullet catching mechanism in place at the small arms firing range allows for accumulation of large quantities of spent lead. When functioning properly, lead dust is captured and contained by a vacuum system and lead fragments are contained in a series of small buckets. Because of the frequency of training at the small arms range, large quantities of spent lead are generated over short periods of time. It is recommended that specific management procedures for the small arms range be developed and documented in order to ensure proper management of the spent lead fragments and dust

P 1: Base Findings Data.txt - 1:59 (306:310) (Super)

Codes: [Communication]

Dental laboratory procedures require the use of ""Ti-Lectro"" polisher to clean metal parts for dental fixtures. Spent polisher, a hazardous waste, is removed from the lab where it is used and stored in an adjacent lab in an unlabeled container. Containers used to store hazardous waste should be labeled with the words ""Hazardous Waste"" and should be maintained at or near the point of waste generation



P 1: Base Findings Data.txt - 1:60 (312:315) (Super)  
Codes: [Communication]

After completion of Environmental assessments, twelve work areas in various organizations were visited. All shop chemical inventories were available. None of the shops' chemical inventories were signed and none of the individuals were aware that these records were required to be kept for 30 years

P 1: Base Findings Data.txt - 1:61 (317:322) (Super)  
Codes: [Communication]

Whenever a facility generates a solid waste, it is required to determine if that waste is also a hazardous waste. The process of cleaning metal surfaces before painting involves the use of rags and the compound ""203 Cresol"" (containing xylene, IPA, toluene, and ethylbenzene). The rags are disposed of as nonhazardous ""soiled rags."" No waste characterization has been performed on the contaminated rags. If found to be hazardous, the rags should be collected at an IAP and disposed of through the base hazardous waste management program

P 1: Base Findings Data.txt - 1:62 (324:330) (Super)  
Codes: [Communication]

Waste materials associated with painting of static displays are collected and managed as ignitable hazardous waste (D001). The waste consists of water (collected during wet sanding operations) and sanding residue. In the past, a separate process requiring the use of solvents was used and resulted in the collection of ignitable wastes. The waste profile associated with the sanding operations has not been updated to reflect the use of water. Federal regulations require generators to determine if solid wastes are hazardous. Wastes found to be hazardous must be managed in accordance with their hazardous characteristics or constituents

P 1: Base Findings Data.txt - 1:64 (335:339) (Super)  
Codes: [Communication]

30 TAC 330.1106 requires lead-acid battery retailers to post a notice containing information set forth in the regulation: ""It is illegal (Class C Misdemeanor) to discard or improperly dispose of a motor-vehicle battery or other lead-acid battery""; ""Recycle your used battery""; and ""State law requires us to accept used motor-vehicle batteries for recycling in exchange for new batteries purchased."" This notice was not posted



P 1: Base Findings Data.txt - 1:65 (341:345) (Super)  
Codes: [Communication]

Eight bulk containers of automotive hazardous materials require further labeling since these materials were transferred from other containers. The bulk containers are required to have the following information transferred from the original container to the bulk containers: name of manufacturer, manufacturer's address, emergency phone number, any pertinent hazardous warnings to include affected target organs

P 1: Base Findings Data.txt - 1:67 (353:357) (Super)  
Codes: [Communication]

EPA disclosure requirements to housing residents include a copy of an EPA-approved lead hazard information pamphlet; the presence, location and condition of LBP and copies of records and reports available pertaining to LBP. The housing office provides a generic paragraph to all new residents in TAFBPAM 32-6003, that states ""Lead based paint has been detected in some MFH units."" No further information about location is included

P 1: Base Findings Data.txt - 1:73 (385:390) (Super)  
Codes: [Communication]

The backflow prevention program mandated under AFI 32-1066 requires improved management and coordination. This is due in part to the recent changeover of facilities maintenance to a contractor. For example, even though contractor personnel have done a good job of taking over backflow preventer maintenance and testing, they were unaware of AFI 32-1066, have not begun to test preventers in the base irrigation system, and had no knowledge of who the base backflow prevention program manager was

P 1: Base Findings Data.txt - 1:76 (400:406) (Super)  
Codes: [Communication]

Gasoline fuel filters are allowed to air dry for 24 hours before being placed in a container at an initial accumulation point. These filters are hazardous waste and need to be managed as such. 40 CFR 260.10 defines ""treatment"" as any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous



waste so as to neutralize such waste, or render it less hazardous or non-hazardous. Air drying these filters is considered to be treatment of a waste; according to 40 CFR 270.1(c), a permit is required for treatment of hazardous waste

P 1: Base Findings Data.txt - 1:83 (433:438) (Super)  
Codes: [Communication]

The state of Texas requires that facilities which accept hazardous household waste directly from the household generators notify the TNRCC executive director and Texas Department of Health Division of Solid Waste Management of this activity. These wastes are accepted by Randolph AFB, but no state notification has been made. In addition, Randolph AFB is not managing these wastes any differently than other hazardous waste streams. The regulations stipulate minor variances (e.g., keep hazardous household waste separate from facility wastes)

P 1: Base Findings Data.txt - 1:84 (440:443) (Super)  
Codes: [Communication]

The paint booth installed at the Auto Hobby Shop is limited to 0.25 lb/hr because the booth does not meet the requirements of 106.433 which allow for more emissions. The facility was not aware of this limit and there was no way for the facility customers to be aware of this limit

P 1: Base Findings Data.txt - 1:89 (458:459) (Super)  
Codes: [Communication]

All housing units are preventatively treated with pesticides before new occupants move in. DoD policy prohibits preventive treatments

P 1: Base Findings Data.txt - 1:90 (461:465) (Super)  
Codes: [Communication]

The most current Pollution Prevention Plan (April 96) did not include all of the required sections. The plan lacked the management strategies for air and water pollution reduction. It also lacked a required section for oil/water separator management strategies. Personnel were not able to quickly locate this plan. This may indicate a lack of attention to the pollution prevention program



P 1: Base Findings Data.txt - 1:91 (467:469) (Super)  
Codes: [Communication]

Two containers storing flammable hazardous waste (gasoline at Bldg. 1070 and paint/paint thinner at Bldg. 499) are not grounded. Federal regulations require these wastes to be stored in a manner to prevent accidental ignition

P 1: Base Findings Data.txt - 1:94 (478:481) (Super)  
Codes: [Communication]

A water buffalo is used at the Lackland Training Annex to supply potable water. Water trucks and tanks must meet specific requirements to ensure the protection and potability of the water supply. Water from this source has never been sampled for microbiological analysis, free chlorine residuals are not monitored, and operational records are not kept

P 1: Base Findings Data.txt - 1:100 (496:499) (Super)  
Codes: [Communication]

Pesticide usage by housing contracts are not reported to Pest Management for inclusion into the WIMS pesticide program. Base residents acquiring pesticides from self help do not sign acknowledgements of understanding, nor is the pesticide issued reported to pest management for inclusion into the WIMS program

P 1: Base Findings Data.txt - 1:101 (501:505) (Super)  
Codes: [Communication]

Removal action was conducted on landfill 28 without being made available for public inspection. It is required that evaluation/cost analysis is placed in the administrative record, that notice of availability of the administrative record is published in a newspaper of general circulation, public comment is provided for, and a written response to significant comments is included in the administrative record

P 1: Base Findings Data.txt - 1:115 (566:568) (Super)  
Codes: [Communication]



A single accumulation point is used to collect wastes generated from painting operations at Bldg. 207 (Hangar) and the paint booth at Bldg. 201. Separate accumulation points should be established at or near the locations where the wastes are generated

P 1: Base Findings Data.txt - 1:117 (577:581) (Super)  
Codes: [Communication]

Hazardous Material Information System (HMIS) material safety data sheets (MSDSs) from the manufacturer's proprietary version, LR, were issued to shops and found in their MSDS reference books. The LR series MSDSs are reserved for health hazard assessment, such as by Bioenvironmental Engineering. Shop floor personnel and contractors should not have access to the proprietary version MSDSs in HMIS

P 1: Base Findings Data.txt - 1:124 (619:621) (Super)  
Codes: [Communication]

Most workcenters throughout the installation are not maintaining completed AF Forms 3952, Hazardous Material Authorization Request. Any workcenter that uses hazardous materials is required to maintain copies

P 1: Base Findings Data.txt - 1:126 (627:632) (Super)  
Codes: [Communication]

All gasoline tank trucks at major emission sources in Pulaski County are required by state regulation to be pressure tested. The Air National Guard (ANG), a tenant at Little Rock AFB, has operated an M-49 tank truck for the past year for the purpose of dispensing gasoline into vehicles and AGE equipment until the new fuel dispensing facility comes online. This tank truck is borrowed from the ANG unit in Hot Springs and has not had the pressure testing required before operating at Little Rock AFB

P 1: Base Findings Data.txt - 1:128 (640:643) (Super)  
Codes: [Communication]

For commercial products and smaller government-acquired products, no suitable blank area is available on the product container for the approximately 2-inch by 4-inch barcode tracking number label used by Altus. In some cases, the



Altus tracking label obscures the hazardous material label placed on containers by the manufacturer

P 1: Base Findings Data.txt - 1:143 (710:711) (Super)  
Codes: [Communication]

The concrete/asphalt debris area is acquiring other kinds of material - shingles, metal, general trash, etc

P 1: Base Findings Data.txt - 1:145 (717:723) (Super)  
Codes: [Communication]

The Auto Hobby Shop maintains a paint booth in which base personnel are allowed to refinish personal vehicles. There is no closed container present at the site where customers can dispose of solvent laden rags to prevent unused VOCs from volatilizing into the atmosphere. In addition, records indicate that vehicle surface preparation has been performed using cleaning fluids that exceed 1.4 pounds of VOC per gallon which is the limit set by local law for this operation. Luke AFB is located in an ozone nonattainment area which has been recently redesignated from a "moderate" to a "serious" classification

P 1: Base Findings Data.txt - 1:149 (737:743) (Super)  
Codes: [Communication]

All vehicles that deliver gasoline to a stationary storage vessel in Maricopa County are required to be certified annually with a pressure test which meets specific requirements. While it appears that the C-300 tank truck used by the base to serve in this function was tested over two years ago, no verification that this test has been completed since that time could be produced. In addition, the contractor's reporting of the test that was performed does not contain all of the information required by regulation. Notification must also be made to the Maricopa County Control Officer prior to this testing

P 1: Base Findings Data.txt - 1:151 (752:755) (Super)  
Codes: [Communication]

56 FW OPLAN 81-6 Hazardous Waste Management Plan requires each container used to accumulate hazardous waste be marked with the words "Hazardous Waste," the stream name, and the accumulation point number.



IAPs across Luke AFB demonstrate a variety of labeling practices and should be standardized to meet the requirements of OPLAN 81-6

P 1: Base Findings Data.txt - 1:153 (759:764) (Super)  
Codes: [Communication]

Current practice at the paint booth is to allow cans of paint to air dry before disposing of them in the trash. Waste products at vehicle refinishing facilities in Maricopa County are required to be stored in closed containers. While performing an assessment in Bldg. 922, a memorandum was clearly posted prohibiting this practice and citing the regulations. Luke AFB was issued a Notice of Violation in June 1996 for open containers of hazardous waste. In addition, this is a repeat finding from the 1997 Internal ECAMP

P 1: Base Findings Data.txt - 1:156 (777:780) (Super)  
Codes: [Communication]

The housing office did not have documentation that the housing maintenance contractor had been notified of location and amount of LBP and asbestos in the housing areas. This notification is required by OSHA under the multi-employee worksite clause to avoid possible exposures due to inadvertent disturbing of asbestos or LBP in the course of routine maintenance

P 1: Base Findings Data.txt - 1:159 (798:800) (Super)  
Codes: [Communication]

Two 55-gallon drums containing flammable wastes were not grounded at the IAP. Grounds should never be removed from 55-gallon drums, even during cleaning. This is a repeat finding from the 1997 Internal ECAMP

P 1: Base Findings Data.txt - 1:160 (802:807) (Super)  
Codes: [Communication]

Current practice is to transfer paint thinner to a 55-gallon drum at the IAP, located at vehicle maintenance, allowing the can to drain upside down into the drum for 24 hours. This practice violates federal regulations that require a container holding hazardous waste to be closed during storage to prevent leakage or spilling and also to operate with no detectable organic emissions. Luke AFB was issued a notice of violation in June 1996 for open containers of



hazardous waste. In addition, this is a repeat finding from the 1997 internal ECAMP

P 1: Base Findings Data.txt - 1:161 (809:816) (Super)  
Codes: [Communication]

Federal regulations require that wastes be characterized to determine if they are hazardous and that containers storing wastes are properly managed. The Vehicle Maintenance Shop routinely drains used fuel filters of excess fuel and discards the filters as municipal trash. Waste rags contaminated with paint-related wastes were found in a dumpster near Bldg. 911. An open 5-gallon can of grease and a 5-gallon fuel can were abandoned at the vehicle maintenance IAP. A 55-gallon drum containing unknown materials had been abandoned next to dumpster station 120. These materials are potentially hazardous and must be characterized to determine the appropriate disposal requirements

P 1: Base Findings Data.txt - 1:168 (851:858) (Super)  
Codes: [Communication]

At Bldgs. 210 and 5015, used fuel filters contaminated with gasoline are dried for 12 to 24 hours prior to placement in an appropriate container located in an initial accumulation point. 40 CFR 260.10 defines "treatment" as "any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste nonhazardous, or less hazardous; safer to transport, store, or dispose of." Air drying the filters is considered to be treatment

P 1: Base Findings Data.txt - 1:169 (860:864) (Super)  
Codes: [Communication]

An open bucket of spent plastic bead-blast media was found behind the bead-blast machine in Building 207. In addition, the drum used to contain the media was found unlabeled and the bung ring was not secured. Although the media is handled as a recyclable material, it may exhibit hazardous characteristics and should be handled as such until it is removed for recycling

P 1: Base Findings Data.txt - 1:170 (866:869) (Super)  
Codes: [Communication]



Regulations require that hazardous waste be collected at or near the point of generation in an IAP. Amalgam and lead foil at the dental clinic are collected in the individual exam rooms and x-ray room, respectively, in small jars. Once these jars are full, they are taken downstairs to supply and stored on a shelf until they are taken to the 90-day facility at DRMO

P 1: Base Findings Data.txt - 1:171 (871:872) (Super)  
Codes: [Communication]

Off-road vehicle's (ORV's) are being operated in the expansive area west of Bldg. 1426 on the east side of the base. This activity is affecting the soil, vegetation, and wildlife

P 1: Base Findings Data.txt - 1:172 (874:877) (Super)  
Codes: [Communication]

The base is currently identified as being in a flood plain. ELAP documentation is required for each proposed action and SAF/MIQ must sign a Finding of No Practicable Alternative (FONPA) before construction may take place in a floodplain. There is no evidence FONPAs have been signed for base construction projects

P 1: Base Findings Data.txt - 1:173 (879:881) (Super)  
Codes: [Communication]

Spent aerosol spray cans have been transported from Gila Bend AFAP to Luke AFB for disposal. Because Luke AFB does not have a permitted hazardous waste treatment facility, these shipments of hazardous waste are not allowed under 40 CFR

P 1: Base Findings Data.txt - 1:174 (883:885) (Super)  
Codes: [Communication]

The storage of hazardous materials needs to be better organized. Bleaches, acids, and other cleaners were commingled, which could result in toxic fumes if the containers were damaged and leaking

P 1: Base Findings Data.txt - 1:179 (906:912) (Super)



Codes: [Communication]

Used gasoline filters are allowed to drain for 24 hours before being transferred to the storage drum within the AGE IAP. The draining process is accomplished in a closed container immediately adjacent to the IAP storage drum. Allowing the filters to drain and/or air dry for an extended period of time constitutes treatment of a hazardous waste and requires a RCRA permit. Treatment is defined in part as a process designed to change the character of a hazardous waste so as to render the waste non-hazardous or less hazardous. Air drying allows for the volatilization of hazardous constituents rendering the filters less hazardous

P 1: Base Findings Data.txt - 1:180 (914:920) (Super)  
Codes: [Communication]

On almost all ASTs inspected, the markings on the tanks were inadequate. The requirements are outlined in OSHA Reg. 1910.106, AFI 23-204, 6.1, and Mil-STD-161F. The markings on the tanks should include: 1) fuel type; and 2) no smoking within 50 feet. These markings should be visible from 50 ft and from all angles of approach to the facility (use multiple markings if necessary). These markings were present at each location but were attached to the generator buildings and not the tanks. Recommend leaving these signs in place and adding additional markings to the tanks

P 1: Base Findings Data.txt - 1:184 (941:945) (Super)  
Codes: [Communication]

The outside pesticide storage area containing 55-gallon drums has a containment curb surrounding the area except for a foot wide opening that would direct a spill to a drain to a holding tank. MIL HDBK 1028/8A, para 3.5.2.3, states ""Use of a holding tank for any storage of any pesticide could bring the installation under additional regulation and could result in considerable unnecessary expense.""

P 1: Base Findings Data.txt - 1:189 (963:964) (Super)  
Codes: [Communication]

An acid locker contained incompatible storage of hazardous materials. Reneuz was stored on the same shelf as muriatic acid. The MSDS for the reneuz stated not to store with acids



P 1: Base Findings Data.txt - 1:191 (969:977) (Super)  
Codes: [Communication]

The base was granted an exemption to modify the Hangar 48 paint booth. The exemption (30 TAC Section 106.433) requires that a 30 lb/hr site-wide (base-wide) VOC emission limit not be exceeded. To demonstrate compliance with this limit, the exemption requires that records for hourly, daily, weekly, and annual emissions and actual hours of daily operation be compiled on a monthly basis. This requirement is not currently being met. The TNRCC was contacted to determine if this recordkeeping was necessary at all paint locations or just at the Hangar 48 location. The TNRCC response was that their intent was to have the recordkeeping required at all exempted surface coating locations. The TNRCC's Craig Richardson will contact Mr. Cepeda (12 CES/CEV) with a regulatory interpretation from TNRCC legal staff

P 1: Base Findings Data.txt - 1:193 (982:985) (Super)  
Codes: [Communication]

A universal waste container allocated to collect spent fluorescent light bulbs was mislabeled as containing incandescent light bulbs. Florida state regulations require each container be labeled ""spent mercury-containing devices for recycling"" along with the accumulation start date

P 1: Base Findings Data.txt - 1:196 (996:999) (Super)  
Codes: [Communication]

A rusted 5-gallon container of tar-like material had been abandoned in the contractor yard. The material was out in the open, exposed to the elements, and leaking onto the ground. The waste and contaminated soil should be properly containerized and should be evaluated to determine if it is hazardous

P 1: Base Findings Data.txt - 1:197 (999:1002) (Super)  
Codes: [Communication]

In addition, MEK-soaked rags used to wipe down items to be painted and to clean the outside of the paint guns are being disposed of as municipal trash at Bldg. 201. A hazardous waste stream profile could not be presented upon request. This waste also needs to be evaluated to determine if it is hazardous



P 1: Base Findings Data.txt - 1:200 (1015:1018) (Super)  
Codes: [Communication]

Civil Engineering, Contracting, and other base organizations are not participating in the Hazardous Material Management Process (HMMP). Civil Engineering and other base contractors or organizations are not registering and tracking their hazardous materials as required in the Altus AFB Instruction 32-7001, Environmental Compliance

P 1: Base Findings Data.txt - 1:203 (1031:1033) (Super)  
Codes: [Communication]

An unlabeled spray bottle of cleaner was found in the base custodial contract storage area of Building 214. Containers of hazardous materials in the work place are required to be labeled, tagged, or marked with their contents

P 1: Base Findings Data.txt - 1:204 (1035:1036) (Super)  
Codes: [Communication]

The Hazard Communication binder had none of the required regulations and most of the personnel in the section showed little concern to correct the situation

P 1: Base Findings Data.txt - 1:205 (1038:1040) (Super)  
Codes: [Communication]

The dumpsters at dumpster stations 603, 120, and 121 contained a large amount of aluminum cans and corrugated cardboard. These dumpsters are clearly marked ""no recyclable material"" and are located less than a few feet from recyclable material containers

P 1: Base Findings Data.txt - 1:207 (1046:1052) (Super)  
Codes: [Communication]

Two rolls of solder made by Bow Chemical in Union NJ were found in the KC-135 CTK tool drawer. The solder was not included in the shop's hazardous material authorization list and no MSDS was available for the Bow Chemical solder. An MSDS was found behind another MSDS for Kester solder in the MSDS reference book. Apparently the brand of solder had been substituted sometime in the past without Mr. Hansell being made aware of the change. Mr.



Hansell believed that there were not any hazardous materials in the CTK tool drawers. Mr. Hansell controls all other hazardous materials used in the KC-135 phase docks

P 1: Base Findings Data.txt - 1:209 (1061:1062) (Super)  
Codes: [Communication]

Drum of antifreeze reinhibitor was unmarked. The drum was located in the vehicle maintenance area. The reinhibitor is used to recycle vehicle antifreeze

P 1: Base Findings Data.txt - 1:211 (1068:1073) (Super)  
Codes: [Communication]

The base Hazardous Waste Management Plan is currently under revision by an outside contractor. The previous version of the plan is dated 1 Mar 95. AFI 32-7042 requires the plan to be updated and revised on an annual basis. As currently revised, the plan has been published as a 90% submittal for review and coordination; as a result, the plan is incomplete. As an example, Appendix A: Hazardous Wastestream Inventory and Appendix C: Accumulation Points do not accurately reflect current conditions at the base

P 1: Base Findings Data.txt - 1:212 (1075:1082) (Super)  
Codes: [Communication]

Whenever a facility generates a solid waste, it must determine if that waste is also hazardous. Cloth rags are used to apply lacquer thinner to metal surfaces in preparation for painting. Once used, the rags are stored in a drum which is also used to store rags contaminated with latex paint. Although the latex-contaminated rags are non-hazardous, the lacquer thinner-contaminated rags are likely to be hazardous. These should be segregated from all others and tested to determine whether they are hazardous. In addition, cloth gloves are used in conjunction with the rags to apply the lacquer thinner. These gloves may also be hazardous and should be managed accordingly

P 1: Base Findings Data.txt - 1:216 (1107:1112) (Super)  
Codes: [Communication]

The state of Texas requires that all waste streams generated by a facility be registered on the facility's Notice of Registration (NOR). 30 TAC Section 335.6(b) and (c) requires that the NOR be updated as needed to accurately reflect the



waste streams and waste management units that are associated with the generator. Four active waste streams identified by the base were not listed on the most recent NOR reviewed. In addition, 11 waste streams were described by waste codes which did not match the waste codes listed on the NOR

P 1: Base Findings Data.txt - 1:217 (1114:1118) (Super)  
Codes: [Communication]

Luke AFB is required to obtain a Title V operating permit from the Maricopa County Environmental Services Department. CEV submitted an amended application in January 1998. A review of this document during ECAMP revealed that it did not address the applicability and requirements of Rule 345 of the local regulations pertaining to vehicle refinishing. The regulation is definitely applicable to operations at Luke AFB and was overlooked by mistake

P 1: Base Findings Data.txt - 1:218 (1120:1121) (Super)  
Codes: [Communication]

A flammable locker appeared to have been repainted. The cabinet was stenciled ""Flammables"" but the cabinet also requires a stencil ""Keep Fire Away""

P 1: Base Findings Data.txt - 1:219 (1123:1126) (Super)  
Codes: [Communication]

State Permit No. 21594 requires that records of No. 2 fuel oil purchases including date, amount purchased, and sulfur content be kept at the facility. Although these records appear to have been maintain in the past, the records are not currently being kept. Additionally, written confirmation of the permit expiration date should be obtained from TNRCC

P 1: Base Findings Data.txt - 1:220 (1128:1130) (Super)  
Codes: [Communication]

A 55 gallon drum containing PD680 rags generated during the gun cleaning process was found not grounded. Federal regulations require that a container storing ignitable wastes be managed in such a way as to prevent accidental ignition



P 1: Base Findings Data.txt - 1:221 (1132:1139) (Super)  
Codes: [Communication]

(1) Naphtha-soaked rags are used to clean metal surfaces in Hangar 61. Currently, spent rags are being disposed of in the municipal trash. Federal regulations require generators of solid waste to determine whether that waste is hazardous. These rags may potentially be characteristically hazardous due to the flammable nature of naphtha. The rags should be tested to determine how to appropriately store and dispose of them. (2) Golf Course Maintenance disposes of tyvek potentially contaminated with pesticides and/or herbicides as a non-hazardous waste. No waste characterization has been performed to determine if the tyvek is hazardous or not

P 1: Base Findings Data.txt - 1:223 (1143:1149) (Super)  
Codes: [Communication]

AFI 37-7005 requires installation Environmental Protection Committee to "ensure a systematic, interdisciplinary approach to environmental quality and integrate this approach into planning and decision-making." Review of EPC minutes shows that virtually 100% of meeting consists of presentations by base Environmental Flight. Although subcommittees were formed in February 1997, chaired by other members of wing staff, they do not report to the EPC and appear inactive with the exception of the Pollution Prevention/Compliance/Stormwater subcommittee chaired by the Deputy Commander of the Logistics Group

P 1: Base Findings Data.txt - 1:226 (1159:1162) (Super)  
Codes: [Communication]

The relocation of the DRMO boundary fence for a road-widening project caused previously placed waste tires to be located within 20 feet of the boundary fence. Arizona regulations require waste tire collection facilities to keep waste tires at least 20 feet from the boundary fence

P 1: Base Findings Data.txt - 1:227 (1164:1167) (Super)  
Codes: [Communication]

A 55-gallon drum of tellus compressor oil was stored in a horizontal position with the hazardous warning label down. In this position, the identity of the materials is not readily available to the users. 29 CFR 1910.1200 Subpart Z, 4A states that labels must be legible and prominently displayed



P 1: Base Findings Data.txt - 1:228 (1169:1172) (Super)  
Codes: [Communication]

The LBP Plan was completed by contract in 1996. The six-volume plan has not been approved by the wing commander or the Environmental Protection Committee. Because of its unwieldy size, the only copy is kept in the Environmental Flight; the plan is not being used. Procedures described in the plan do not accurately reflect local procedures

P 1: Base Findings Data.txt - 1:233 (1178:1181) (Super)  
Codes: [Communication]

While the plan in its current form is much improved over the 1996 draft, it doesn't adequately address the following: 1) responsibilities in the basic plan or Annex C; 2) the basic plan [para 2a(1)] states all abatement work will be done by contract yet Para 2(b)(3)(c) references an in-house abatement team

P 1: Base Findings Data.txt - 1:240 (1218:1221) (Super)  
Codes: [Communication]

Approximately 75 head of cattle and a herd of horses are grazing on installation land at the Blackjack Drop Zone. A no grazing management plan exists in the Land Management Operational Component Plan. An added note to this is that soil erosion is occurring in the northeast corner of the site due to livestock movement

P 1: Base Findings Data.txt - 1:242 (1228:1232) (Super)  
Codes: [Communication]

Civil Engineering (CE) workcenters are not complying with the HAZCOM program. 29 CFR 1910.1200, App E, Subpart Z and AFOSH 161-21 requires all workcenters that handle or store hazardous materials to have this program in place. The following items were not available in most workcenter areas: A copy of AFOSH 161-21, Little Rock AFB Instruction 48-105, and a workcenter specific training program. These regulations will explain the setup of the program

P 1: Base Findings Data.txt - 1:247 (1256:1260) (Super)



Codes: [Communication]

The Lead-Based Paint (LBP) Management Plan does not appear to be final. It has no date or approval from the EPC. There is also some ambiguity about who is the LBP Program Officer. Past working group minutes show the Bioenvironmental Engineer as the Program Officer. However, it is much more customary to name an individual from the Environmental Flight as the Program Officer

P 1: Base Findings Data.txt - 1:248 (1265:1269) (Super)

Codes: [Communication]

An aerosol can of ""Stain Killer"" was found in a solid waste dumpster. This waste has been characterized as a hazardous waste and is being generated by Family Housing Maintenance (Bldg. 1044). This single can should not have been placed in the solid waste dumpster for disposal and should have been disposed of in the hazardous waste initial accumulation point already established by Family Housing Maintenance

P 1: Base Findings Data.txt - 1:255 (1299:1303) (Super)

Codes: [Communication]

A backflow prevention device tester, SN 15701-2, provided to the team members had no calibration data available. Checking with PMEL, Mr. Al Pefermeter, this device was not entered into the system or calibrated by them. Calibration of testing devices is required on an annual basis for testing backflow prevention devices. Any tests accomplished with this tester are not certified. They should be re-accomplished with a calibrated device

P 1: Base Findings Data.txt - 1:256 (1305:1307) (Super)

Codes: [Communication]

The CE asbestos inspectors go into asbestos containments as part of their duties. They are not currently included in the base respiratory protection program. An evaluation of their tasks has not been performed to determine adequate protective measures on medical surveillance

P 1: Base Findings Data.txt - 1:260 (1324:1326) (Super)

Codes: [Communication]



Full compressed gas cylinders of oxygen and acetylene were not marked with appropriate NSN and nomenclature on the DD Form 1574. Empty cylinders were clearly marked to reflect they were indeed empty

P 1: Base Findings Data.txt - 1:261 (1330:1334) (Super)  
Codes: [Communication]

The Asbestos Maintenance and Operations Plan and the Asbestos Management Plan do not accurately reflect current practices. For instance, the forms listed in the plans are not the same as those actually used. The plans also state the Asbestos Program Officer (APO) will sign off on the waste manifests, yet the APO is not actually reviewing all waste manifests. While procedures are adequate, the plans and practices should be consistent

P 1: Base Findings Data.txt - 1:263 (1336:1338) (Super)  
Codes: [Communication]

A secondary container in the lab contained methanol which was transferred from a larger container. The secondary container requires additional hazardous warning information. The only form of identity on the container was the nomenclature of the material

P 1: Base Findings Data.txt - 1:264 (1340:1342) (Super)  
Codes: [Communication]

One of the cold solvent degreasers in this building was left unattended with the lid open. To reduce volatilization of the solvent in the machine, the lid should be closed except when the degreaser is actually being used

P 1: Base Findings Data.txt - 1:267 (1350:1353) (Super)  
Codes: [Communication]

30 TAC 330.1004(h) requires that generators receive a signed receipt for each shipment of regulated waste. WHMC obtains receipts, but these receipts often contain conflicting or missing data. In the first five months of CY98, over 25% of the receipts had missing or conflicting data, usually relating to the number of boxes shipped

P 1: Base Findings Data.txt - 1:272 (1379:1381) (Super)



Codes: [Communication]

The energy management and control systems section did not maintain an accurate workplace chemical list. The list which was on hand did not reflect NSN's and consisted of authorizations for three shops combined

P 1: Base Findings Data.txt - 1:273 (1383:1385) (Super)  
Codes: [Communication]

A single 55-gallon drum was found in the 90-day storage area without an accumulation start date. Federal regulations require the date for which each period of accumulation begins to be clearly marked and visible for inspection

P 1: Base Findings Data.txt - 1:274 (1387:1389) (Super)  
Codes: [Communication]

Three drums containing hazardous waste in storage at the 90-day facility were not labeled with accumulation start dates. Federal regulations require the date for which each period of accumulation begins to be clearly marked and visible for inspection

P 1: Base Findings Data.txt - 1:275 (1391:1406) (Super)  
Codes: [Communication]

The Title V Operating Permit Application, which was submitted to ADPCE in October 1996, includes a regulatory compliance certification which is signed by the Wing Commander and certifies that the base is in compliance with all applicable regulations. Attachment A of the application lists the applicable requirements. However, several state and federal regulations, to which sources at the base are applicable, have been omitted from the listing. These regulations include ADPCE Regulations 19.10.5.4 and 19.10.5.5, 40 CFR 80.22, and possibly others. The bulk JP-8 storage tanks may also have become subject to 40 CFR 60, Subpart K, when they underwent modifications after July 1984. In addition, the application does not accurately classify certain significant sources such as surface coating operations, does not include new sources such as the storage tanks at 189 ANG, and lists sources which are no longer in operation such as the document incinerators. In the interest of flexibility, the Base should also investigate the inclusion of the inactive JP-8 bulk storage tank which may become active within the next five years. Also, all noncombustion sources will be limited to a federally enforceable throughput increase of 9% above 1994 actual emissions. This limit



does not provide much flexibility for the Base and may cause the Base to be in violation of its Title V permit once issued

P 1: Base Findings Data.txt - 1:276 (1408:1413) (Super)  
Codes: [Communication]

OSHA requires 2-hour awareness training for personnel who could be potentially exposed to asbestos as part of their work. This includes building and utilities maintenance personnel, facility managers, and janitorial personnel. While personnel appear to be cognizant of asbestos, its hazards and proper procedures, and many have been trained in the past, the base doesn't have a comprehensive awareness training and tracking program to ensure the appropriate training for the appropriate personnel

P 1: Base Findings Data.txt - 1:279 (1421:1424) (Super)  
Codes: [Communication]

The Solid Waste Management Plan is incomplete in that it lacks: 1) solid waste disposal statistics since 1995; 2) a current waiver for direct sales of recyclable material; 3) information about the disposition of construction and demolition waste from SABER construction projects; and 4) evidence the plan has been approved

P 1: Base Findings Data.txt - 1:282 (1439:1442) (Super)  
Codes: [Communication]

Throughout the assessment week, multiple IAPs were observed exhibiting different management practices. It is suggested that consistent practices and procedures be established to address: signs/labels to identify the location of an IAP; consistent container labeling; and POC information and phone number

P 1: Base Findings Data.txt - 1:288 (1464:1470) (Super)  
Codes: [Communication]

The LBP Management Plan is currently in draft form. It has not yet been finished or approved by the Wing Environmental Protection Committee (EPC). While the LBP program is very good, the plan does not accurately reflect current practices. For instance, the inspection form and housing occupant letter in the plan are not used. The plan also references use of a heat gun, which is specifically banned in the 1993 HQ USAF/CC Policy Letter. As another example,



Section 3.1 discusses procedures for lead toxicity investigations; however, it does not include the requirement to notify the state of high blood-lead levels

P 1: Base Findings Data.txt - 1:298 (1531:1535) (Super)  
Codes: [Communication]

The interaction between the Environmental Flight, the Engineering Flight, and the Natural Resources Flight is often informal rather than structured. A more formal, systematic process would prevent the possibility of oversights and mishaps. This interaction is especially critical for siting decisions. Because the decisions are routine and periodic, systematization is desirable

P 1: Base Findings Data.txt - 1:299 (1537:1541) (Super)  
Codes: [Communication]

The date of the AICUZ is 1994. No documented review or update could be provided since the 1994 document. Mr. Bob Oliver, Base Planner, stated that some of the drone aircraft had changed from F-106s to F-104s, and that a section of Military Family Housing was being relocated due to its proximity to approach and departure zones. These changes warrant a review and possible update to the AICUZ, along with the biennial review requirement

P 1: Base Findings Data.txt - 1:301 (1549:1550) (Super)  
Codes: [Communication]

The establishment of a ""re-use"" system would prevent the disposal of useful materials as costly hazardous waste

P 1: Base Findings Data.txt - 1:303 (1557:1559) (Super)  
Codes: [Communication]

The installation hazardous waste accumulation point is next to a street, accessible to anyone on the base. Additionally, the lids to the drums do not remain securely closed, so the contents are not protected from the elements

P 1: Base Findings Data.txt - 1:306 (1567:1567) (Super)  
Codes: [Communication]



Scrap material was dumped on the driveway in front of the DRMO scrap yard gate

P 1: Base Findings Data.txt - 1:309 (1581:1588) (Super)  
Codes: [Communication]

40 CFR 745.227 and 29 CFR 1926.52 require specific methodologies for removal of lead-based paint (LBP). The LBP in MFH has been assessed, however the results weren't given to the Housing Office or the Housing Maintenance Contractor. 29 CFR 1926.52 also requires communication of lead results to other employers at the site. According to Mr. Calhoun, Chief Housing QAE, the contractor hand preps surfaces to be painted and treats any waste as solid waste. Because the housing units contain some LBP, a potential exists for inappropriate abatement procedures causing increased risk to maintenance personnel and housing residents to lead exposures and illegal disposal of hazardous waste

P 1: Base Findings Data.txt - 1:316 (1624:1628) (Super)  
Codes: [Communication]

A total of approximately 100 chemicals were not on the Authorization Unit Listing (AUL) for general purpose vehicles, maintenance, and allied trades. AFI 32-7086, 2.3.4.4 states procurement and issue actions shall not occur for hazardous materials unless the authorization appears on the AUL. These items are not on the AUL and have not been entered into the Environmental Management Information System (EMIS)

P 1: Base Findings Data.txt - 1:321 (1655:1658) (Super)  
Codes: [Communication]

Two cases containing insecticides, 12 cans per case, were found in a storage building outside Building 264. This item was not listed on the organization's Chemical Authorization Listing. AFI 32-7086-2.3.4.4 states that procurement and issue actions shall not occur for hazardous materials unless the authorization appears on the Authorization Unit Listing

P 1: Base Findings Data.txt - 1:322 (1660:1663) (Super)  
Codes: [Communication]

COPARS store at transportation has not received approval on locally purchased materials. Hazardous Materials are purchased without following the



procedures of AFI 32-7086. Since these materials are not tracked through the Hazardous Materials Pharmacy (Hazmo), the possibility of inaccurate EPCRA reports are a concern

P 1: Base Findings Data.txt - 1:324 (1670:1674) (Super)  
Codes: [Communication]

The Lead-Based Paint (LBP) Management Plan doesn't appear to be final. It has no data or approval from the EPC. This is a carry-over finding from the previous external ECAMP in 1996. The plan also doesn't accurately reflect current LBP management practices. For instance the forms in the plan are not currently being used. The plan also references use of a heat gun, which is specifically banned in the 1993 HQ USAF/CC Policy Letter

P 1: Base Findings Data.txt - 1:328 (1690:1694) (Super)  
Codes: [Communication]

The solid waste management plan contains solid waste management contracts and Air Force guidance documents but lacks required contents, such as inventories of solid waste streams and plan implementation procedures. Some of this information is in the pollution prevention management action plan, but the municipal solid waste portions of that document are several years out of date

P 1: Base Findings Data.txt - 1:334 (1728:1729) (Super)  
Codes: [Communication]

In some cases, it could not be substantiated that the appropriate level of management signed the FONSI. In some cases, the FONSI was signed but not dated

P 1: Base Findings Data.txt - 1:336 (1740:1749) (Super)  
Codes: [Communication]

The State requires that formal storm water pollution prevention plans (SWPPP) be prepared for projects disturbing an aggregate area of soil equal to or exceeding 5 acres. The plan contents and requirements are specified in the permit. Three current projects meeting the permitting requirements are now underway. One of these (landfill cap) appears to have a satisfactory SWPPP. The Squad Ops/AMU Facility is being constructed under a SWPPP contained in the Project Specifications Manual. It is doubtful that this SWPPP would meet all



permit requirements. The new softball field has no SWPPP prepared, only a drawing with some runoff control features shown. There is no question that this project does not meet permit requirements concerning SWPPP preparation. Further, observation of the softball field site reveals that only minimal runoff control measures are in place

P 1: Base Findings Data.txt - 1:340 (1763:1766) (Super)  
Codes: [Communication]

Containers known to hold hazardous waste must be labeled with either the words ""hazardous waste"" or with other words that identify the contents of the containers, as well as the accumulation start date. Five 55-gallon drums were found at the site lacking one or both of these requirements

P 1: Base Findings Data.txt - 1:341 (1768:1773) (Super)  
Codes: [Communication]

A walkway compound (8010-00-641-0427) label was defaced from material allowed to dry on the label as a result of pouring and spilling. AFOSH 161-21, 5d(2) states that hazardous warning labels will not be removed, defaced, or changed. Hazardous chemical warning labels will be used, when available, as a uniform labeling system to meet the labeling requirements for relabeling hazardous material containers when labels have been accidentally defaced or lost. 29 CFR 1910.1200, Appendix E, Subpart Z, (4)(A) also states that labels must be legible

P 1: Base Findings Data.txt - 1:344 (1788:1793) (Super)  
Codes: [Communication]

First storage shed, closest to building 6011 facing west has a cylinder filled with compressed hydrogen. Also, a gallon of isopropyl alcohol is being stored next to the cylinder in the same shed. Shed is not labeled as ""flammable."" An unlabeled 55-gallon drum is also being stored in the same shed. The drum is sealed. ""No Smoking"" sign needs to be posted on shed. Cylinder is not secured from falling over. Ref: Compressed Gas Association Pamphlet P-1-1-1965 (CFR 1910.101), 29 CFR 1910.106(d)(1), 29 CFR 1910.106(d)(2)

P 1: Base Findings Data.txt - 1:345 (1795:1800) (Super)  
Codes: [Communication]



A small compound approximately 100 ft south from entrance to 6000 area, has 3 trailers, and a brown shed (15' x 12' approx.) plus misc. drums filled with unknown liquids outside. Inside the shed are numerous chemicals being stored; paints, fuel, ammonia, hydroxide and hydraulic fluid. A ten-gallon drum is also inside the shed. The drum is not labeled. The items in the shed are in disarray. Paints and fuel containers are mixed amongst each other, ammonia hydroxide being stored next to motor vehicle fuel. Several lids to paints not secure

P 1: Base Findings Data.txt - 1:346 (1802:1802) (Super)  
Codes: [Communication]

Dental Clinic personnel reach by hand into container to remove reusable sharps

P 1: Base Findings Data.txt - 1:348 (1810:1811) (Super)  
Codes: [Communication]

The unleaded mogas and diesel dispensers at the military service station were overdue for calibration (due 3/98). Meters are required to be calibrated annually (IAW AFM 85-16)

P 1: Base Findings Data.txt - 1:350 (1817:1819) (Super)  
Codes: [Communication]

Warning signs were not provided at all fuels loading/unloading areas (Fac. 551, 561) to prevent vehicular departure before complete disconnect of flexible fuel transfer lines. Signs were provided at the main fuel offloading area (Bldg PB05)

P 1: Base Findings Data.txt - 1:351 (1821:1822) (Super)  
Codes: [Communication]

Tractor and Truck 90C72 not labeled with ""CONTAMINATED WITH PESTICIDES"". One piece of equipment is labeled only on top so it is not visible from the side at a distance

P 1: Base Findings Data.txt - 1:352 (1824:1830) (Super)  
Codes: [Communication]



Two gallons of hydraulic fluid were not on the Chemical Authorization Listing. Hydraulic fluid is required to maintain the hi-lift equipment in the shop. 29 CFR 1910.1200, Appendix E, Subpart 2, 3 requires a list of hazardous chemicals in the workplace. AFOSH 161-21 5f(1) requires the supervisor and base, or attending support BES, to jointly develop an inventory of all hazardous materials used within the work area. Little Rock AFB Instruction 48-105, 4.2 requires the supervisor to maintain the hazardous chemical inventory and update it when new chemicals are introduced in the work area

P 1: Base Findings Data.txt - 1:353 (1832:1839) (Super)  
Codes: [Communication]

Containers owned by POL are properly labeled and managed. However, some non-POL owned containers are not being properly managed and labeled. Two collection containers (FB02 and FB33) had leaky drain valves that were allowing product to drip onto the ground. One used oil drum in area #6000 that was dropped off by an ""unknown"" generator was improperly labeled. Used oil and JP8 collection containers are routinely dropped off by generating activities without advising POL storage personnel of container drop-off. This made it difficult for POL to determine container ownership so they could adequately record data in product drop-off log. It also made it difficult for POL to contact container owners for container pick up

P 1: Base Findings Data.txt - 1:356 (1851:1858) (Super)  
Codes: [Communication]

Two open cans (less than 1 quart each) of mixed multi-component sealants were found in an open air storage locker adjacent to the Bldg 285 IAPs. Because the sealant materials may require classification as hazardous waste, they should be handled as hazardous waste until a final waste determination is made. If the sealants are found to be hazardous wastes, allowing them to cure (air dry) prior to their transfer to the IAP may constitute treatment of a hazardous waste. In addition, allowing the sealant containers to remain open in an open-air locker may allow rain water to accumulate within the containers, thereby increasing the amount of waste requiring disposal

P 1: Base Findings Data.txt - 1:357 (1860:1864) (Super)  
Codes: [Communication]

Open containers of paint, paint thinner, and paint stripper were found at two locations at the site. These hazardous materials had become contaminated with



rain water and trash; rendering them unusable hazardous waste. Federal regulations require that a container holding hazardous waste be closed during storage to prevent leakage and spilling, and to also operate with no detectable organic emissions

---

Code: Coordination {12-1}

P 1: Base Findings Data.txt - 1:112 (547:555) (Super)  
Codes: [Coordination]

EPA general construction stormwater permit at 47 FR 41209 (9 Sep 1992) was not observed during any phase of design and construction of the new base golf course. Permit requires preparation of a comprehensive project stormwater pollution prevention plan and also the filing of a Notice of Intent (NOI) by the operator (usually considered to comprise both the Air Force and the general contractor). Had this deficiency been discovered during construction, this would have been considered a high vulnerability finding. EPA has been notified of the failure to comply with the permit requirements, and EPA has taken no action to date. This finding is considered to be a management practice, promulgated to prevent similar future occurrences since the project has been completed

P 1: Base Findings Data.txt - 1:113 (557:558) (Super)  
Codes: [Coordination]

Commissary and AAFES recycling is not monitored by the base or included in base recycling statistics

P 1: Base Findings Data.txt - 1:140 (701:702) (Super)  
Codes: [Coordination]

Procedures for annual leak tests of the JP8 bulk fuel tanks were developed; however, they were not coordinated with the BCE to ensure all Federal, State, and local requirements are met

P 1: Base Findings Data.txt - 1:237 (1207:1210) (Super)  
Codes: [Coordination]

The HAZMAT pharmacy is not following proper instructions for coordinating the AF Form 3952s. They are coordinating these forms through the



Bioenvironmental Engineering office for material approval. AFI 32-7086, 2.3.4.3 states that the HAZMART, or other Source of Supply, may issue the requested hazardous materials only after SG, SE, and CE authorization

P 1: Base Findings Data.txt - 1:269 (1360:1367) (Super)  
Codes: [Coordination]

Base has a completed SWPPP and has performed an annual site compliance evaluation as required under the Oklahoma General Storm Water Permit. The plan does require formal modifications and updating due to the 1997 changes made in the permit requirements. The updating of the SWPPP is to be done under contract. Additionally, the permit requires a signed certification that a cross-connection study has been conducted to identify illicit discharges into the base's storm water system. The certification has not been signed, as required, by the wing commander or his delegated appointee, even though the requirement for the study has been met

P 1: Base Findings Data.txt - 1:285 (1451:1455) (Super)  
Codes: [Coordination]

AFI 32-7042 states that a hazardous waste program must include a hazardous waste management plan. The plan must reflect current operations and be updated and approved by the EPC on an annual basis. Tyndall AFB's was last updated in September 1996. The hazardous waste program manager maintains a working copy of the plan which reflects current conditions. This working copy should be finalized and approved by the EPC

P 1: Base Findings Data.txt - 1:289 (1472:1477) (Super)  
Codes: [Coordination]

The housing maintenance inspectors occasionally enter containments during asbestos abatement projects. They use the contractor's powered-air-purifying respirators when entering containments. They are adequately trained and receive respirator fit-testing during their annual training; however, Bioenvironmental Engineering has not performed an evaluation to ensure health is adequately protected and compliance with OSHA regulations (29 CFR 1910.134 and 29 CFR 1926.1101)

P 1: Base Findings Data.txt - 1:296 (1513:1522) (Super)  
Codes: [Coordination]



The 1994 Asbestos Management Plan does not accurately reflect current asbestos management and operational procedures. For instance, the base no longer maintains an in-house abatement team as is described in the plan. An updated plan is currently in draft and has not yet been through coordination with the working functionals. AFI 32-1052 requires that the asbestos management plan address all asbestos management procedures for the installation including compliance with federal, state, and local regulations. The asbestos operations plan must assign responsibilities, establish inspection and repair teams, organizational structure for carrying out asbestos-related work, training, equipment and supply requirements, budget estimates, emergency and interim control measures, and requirements for asbestos documentation, disposition, abatement and analytical work

P 1: Base Findings Data.txt - 1:314 (1613:1618) (Super)  
Codes: [Coordination]

Public water supply systems installing new water mains or repairing existing mains must use specific sanitary precautions to include microbiological sampling. Civil Engineering records indicate that new mains have been installed and old mains have been repaired on Lackland AFB. A review of drinking water sampling records at Bioenvironmental Engineering do not indicate bacteriological samples have been collected and analyzed prior to putting these mains into service

P 1: Base Findings Data.txt - 1:320 (1650:1653) (Super)  
Codes: [Coordination]

Approximately 85 local purchase items through COPARS were not on the Unit Authorization Listing (UAL), and have not been approved through the Hazmo. AFI 32-7086 2.3.4 requires that hazardous material authorization and process standard procedures for requesting and authorizing hazardous materials through all Services of Supply (SOS)

P 1: Base Findings Data.txt - 1:333 (1724:1726) (Super)  
Codes: [Coordination]

Contracts for pest management need to be coordinated by the pest management shop, BEI, and HAZMAT Pharmacy, then sent to HQAETC/CEVN for approval prior to contracting. Current contracts were not coordinated through this process



P 1: Base Findings Data.txt - 1:349 (1813:1815) (Super)  
Codes: [Coordination]

A pest management contract was issued for club pest control services. The contract was not coordinated with pest management or HQ AETC/CEVN prior to issuing contract. No QA was assigned

---

Code: Documentation {64-1}

P 1: Base Findings Data.txt - 1:6 (32:33) (Super)  
Codes: [Documentation]

Current facility schematics were not available. Also, not all fuel valves were properly labeled with valve numbers

P 1: Base Findings Data.txt - 1:8 (39:39) (Super)  
Codes: [Documentation]

A container used to collect used oil as it drains from vehicle engines was not marked

P 1: Base Findings Data.txt - 1:11 (54:54) (Super)  
Codes: [Documentation]

A container used to collect used oil as it drains from vehicle engines was not marked

P 1: Base Findings Data.txt - 1:14 (68:68) (Super)  
Codes: [Documentation]

Used oil container at AAFES gas station garage was unmarked

P 1: Base Findings Data.txt - 1:47 (241:242) (Super)  
Codes: [Documentation]

The ""Flammable, Keep Fire Away"" label on the outside storage locker was grossly faded. It no longer meets the color requirement specified by 29 CFR 1910.106(d)(5)(i)



P 1: Base Findings Data.txt - 1:70 (369:371) (Super)  
Codes: [Documentation]

30 TAC 330.807 requires installations that generate scrap tires to maintain at the installation a copy of the TNRCC notice confirming status as a registered generator. This notice was not available

P 1: Base Findings Data.txt - 1:71 (373:375) (Super)  
Codes: [Documentation]

30 TAC 330.1107 requires retailers of lead-acid batteries to keep a record of the number (1) purchased, (2) accepted as trade-ins, and (3) delivered to a disposal facility. This record was not being kept

P 1: Base Findings Data.txt - 1:72 (377:383) (Super)  
Codes: [Documentation]

40 CFR 761.180 requires specific detailed information on PCB articles and containers to include identification of installation, calendar year, manifest numbers, total number of PCB articles and containers placed into storage and disposed, total weight placed into storage and disposed list of PCB items remaining in service and confirmation of receipt of PCB waste. The log is missing start dates of storage, list of PCB items remaining in service and record to confirm waste facility receipt of transported items. Also, the two items currently in storage (Bldg. 6011) have no labels indicating start date of storage

P 1: Base Findings Data.txt - 1:77 (408:409) (Super)  
Codes: [Documentation]

The MAP did not have all required sections. The missing section is titled ""Community Disposal and Reuse Plan.""

P 1: Base Findings Data.txt - 1:78 (411:414) (Super)  
Codes: [Documentation]

Installations that generate hazardous waste are required to have a Hazardous Waste Management Plan containing specific items (AFI 32-7042). The hazardous waste management plan prepared by Randolph does not contain an



organizational chart outlining the responsibilities or members of the program;  
nor does it contain a hazardous waste inventory

P 1: Base Findings Data.txt - 1:79 (416:420) (Super)  
Codes: [Documentation]

The hazardous waste management plan lists the duties of Initial Accumulation Point managers under Annex D, #12, on page D-12. Item 6 states that IAP managers shall maintain a log documenting the amount, date, and person certifying the type of waste disposed of at the IAP. This log is not being maintained at Hangar 63, nor does it appear that it is being maintained at most IAPs

P 1: Base Findings Data.txt - 1:87 (451:453) (Super)  
Codes: [Documentation]

A container of Sieve absorbent pellets was noted with a hazardous warning label that had deteriorated and was illegible from constant use. The hazardous warning information was difficult to read

P 1: Base Findings Data.txt - 1:93 (474:476) (Super)  
Codes: [Documentation]

A grease gun containing general purpose grease was not labeled with the information required by AFOSH 161-21. Hazardous Materials Warnings are to include target organs, name of manufacturer, address, phone number, as referenced in AFOSH 161-21, para. d(1)-d(3)

P 1: Base Findings Data.txt - 1:95 (481:483) (Super)  
Codes: [Documentation]

Additionally, Prim Rib uses a contractor to pump water into a water tank but was unable to verify that water quality requirements were being met

P 1: Base Findings Data.txt - 1:96 (485:487) (Super)  
Codes: [Documentation]



The degreaser is required by 30 TAC, Chapter 106.454 to have a permanent and conspicuous label summarizing proper generating procedures posted. The label was missing at this operation

P 1: Base Findings Data.txt - 1:97 (489:490) (Super)  
Codes: [Documentation]

30 TAC 330.807 requires a manifest for each shipment of used tires. The service station kept a daily log of shipments, but manifests were only generated monthly

P 1: Base Findings Data.txt - 1:98 (492:493) (Super)  
Codes: [Documentation]

Flammable locker which houses workcenter products contained material which was improperly labeled

P 1: Base Findings Data.txt - 1:99 (493:494) (Super)  
Codes: [Documentation]

""Floor oil"" was placed in a plastic spray bottle for ease in using it; however, the manufacturer hazard warning information was not placed on the spray bottle

P 1: Base Findings Data.txt - 1:102 (507:508) (Super)  
Codes: [Documentation]

A tank filled with cleaning solvent was not identified properly to ensure containers' hazardous material contents were clearly stated (AFOSH Std 161-21, para 5.0.8.5)

P 1: Base Findings Data.txt - 1:103 (510:513) (Super)  
Codes: [Documentation]

The work center was not maintaining copies of approved AF Form 3952 for approved hazardous materials. AFI 32-7086, 2.3.4.5 (1 Aug 97) states that requestors must maintain copies of their completed AF Forms 3952, and installations must maintain a file(s) of all completed AF Forms 3952



P 1: Base Findings Data.txt - 1:107 (529:531) (Super)  
Codes: [Documentation]

There are no danger/warning signs posted, in accordance with T.O. 37-1-1, warning military service station customers that fuel containers should not be filled on pick-up bed plastic liners, but rather they should be placed on the ground prior to filling

P 1: Base Findings Data.txt - 1:108 (533:535) (Super)  
Codes: [Documentation]

The manhole covers for the gasoline USTs are not marked identifying the low, medium, or premium grade gasolines. The potential exists for the delivery operator to distribute the wrong product into the wrong tank

P 1: Base Findings Data.txt - 1:110 (541:543) (Super)  
Codes: [Documentation]

Project data in the following Operational Component Plans (OCP) reflects outdated FY96 and FY97 Scheduling: Forest Management OCP, Wetlands OCP, Outdoor Recreation OCP, Land Management OCP, Watershed Protection OCP, Geographic Information Systems (GIS) OCP

P 1: Base Findings Data.txt - 1:118 (583:588) (Super)  
Codes: [Documentation]

Two gallons of gray paint gloss, color #16187, and one gallon of flat gray, color #36118, had unreadable labels because they were torn or covered with paint. AFOSH 161-215d(3)(d) states that DD Form 2521 or 2522 should be used, when available, as a uniform labeling system to meet labeling requirements for relabeling hazardous materials containers when labels have been accidentally defaced or lost. 29 CFR 1910.1200, Appendix E, Subpart Z, A states labels must be legible and prominently displayed

P 1: Base Findings Data.txt - 1:120 (595:598) (Super)  
Codes: [Documentation]

Three 55-gallon drums of ""permanent cold patch"" had no hazardous warning labels. 29 CFR 1910.1200 App E, Subpart Z, (A) states that containers of



hazardous chemicals must be labeled with the identity, manufacturers name, phone, address, and any hazardous warnings. AFOSH 161-21, 5d (1)

P 1: Base Findings Data.txt - 1:121 (600:602) (Super)  
Codes: [Documentation]

The AAFES Service Station records of waste tire pick-ups include the pick-up date and the number of tires transported, but do not include the registration number of the collector or the name of the driver, both of which are required by Florida regulation

P 1: Base Findings Data.txt - 1:122 (604:608) (Super)  
Codes: [Documentation]

One container of Orange Peel solvent was received through IMPAC from a local distributor without any labeling. 29 CFR 1910.1200, Appendix E, Subpart Z (A) requires distributors to ensure all containers are labeled with hazardous warnings, and name and address of the producer or other responsible party. Since this item was accepted without the labels, the employer is now responsible for labeling the container of hazardous material

P 1: Base Findings Data.txt - 1:123 (610:617) (Super)  
Codes: [Documentation]

Transportation has 8 tanks that require additonal labeling. These tanks contain 5W30 oil, 15W40 oil, Dextrain transmission fluid, antifreeze, 10W30 oil, 15W10 oil, and floor soap. The identity of the material was stenciled on the tank; however, additional information is required. AFOSH 161-21, 5d(a),(b), (c) requires the following information: identity of hazardous material, appropriate hazard warnings, name, address, and phone number of manufacturer; and 5d(8)(b) states that vats, tanks, and other containers filled with hazardous materials for work areas use may be identified by signs, placards, process sheets, batch tickets or other such written materials

P 1: Base Findings Data.txt - 1:125 (623:625) (Super)  
Codes: [Documentation]

Two items were not labeled with the proper information, including the identity, manufacturer's name, address, phone number and any hazard warnings available. See 29 CFR 1910.1200, Appendix E, Subpart Z (A)



P 1: Base Findings Data.txt - 1:127 (634:638) (Super)  
Codes: [Documentation]

Five transfer containers of hazardous materials require further labeling requirements. These items are: isopropyl alcohol (6810-00-286-5430), coating synthetic (2) (8030-00-145-0111), and flux soldering (2) (3439-00-255-9935). 29 CFR 1910.1200, Appendix E, Subpart Z (A) requires that if a hazardous material is subsequently transferred by the employer from a labeled container to another container, the employer will have to label that container

P 1: Base Findings Data.txt - 1:129 (645:647) (Super)  
Codes: [Documentation]

The Little Still, model LS 55IID, is used to distill used PD-680 Type II back to the clean product for base solvent reuse. Vats and tanks of hazardous material are required to be labeled with the contents. The distillation vat of the still does not have a content label

P 1: Base Findings Data.txt - 1:130 (649:652) (Super)  
Codes: [Documentation]

One gallon of red enamel was found with a damaged label. Hazardous information was difficult to read. 29 CFR 1910.1200, App E, Subpart Z, (A) states that all labels will be legible and prominently displayed. AFOSH 161-21, 5d(2) states that these labels will not be removed, defaced, or changed

P 1: Base Findings Data.txt - 1:131 (654:658) (Super)  
Codes: [Documentation]

Five hazardous material containers were improperly labeled. These containers contained: denatured alcohol (3) (6810-00-543-7415) and general purpose oil (9150-00-542-1430). These materials are required to be labeled with the following information: identity of material, name, address, and phone number of manufacturer, and any hazardous warning information. 29CFR1910.1200, App E, Subpart Z, (A)

P 1: Base Findings Data.txt - 1:133 (668:674) (Super)  
Codes: [Documentation]



Special Purpose Vehicles had 8 tanks that required additional labeling. These tanks contained 15W40, 5W30, 90W, soap, Hydra Trans, Dexron, 10W, and antifreeze. The identity of the hazardous materials were labeled on each tank, however, additional information is required. AFOSH 161-21, 5(a), (b), (c) requires the following information: identity of hazardous material; appropriate hazard warnings; name, address, and phone number of manufacturer; 5(d)(8)(b) states that vats, tanks, and other containers filled with hazardous materials for work areas use may be identified by signs, placards, process sheets, batch tickets, or other such written materials

P 1: Base Findings Data.txt - 1:135 (679:680) (Super)  
Codes: [Documentation]

Base Exchange service station properly manifested used tires but did not maintain a log showing date, number of tires, and method of transportation

P 1: Base Findings Data.txt - 1:136 (682:687) (Super)  
Codes: [Documentation]

Four bottles of general purpose cleaner require further labeling. When a hazardous material is removed from an original container and transferred to a spray bottle (secondary container), that secondary container must have the following information on its label: name of manufacturer, manufacturer's address, emergency phone, and any hazardous warning information to include target organs affected from the label on the original container. These four containers had all the information except for hazardous warnings

P 1: Base Findings Data.txt - 1:137 (689:692) (Super)  
Codes: [Documentation]

An unlabeled 55-gallon drum of spent bead blast media was found adjacent to a bead blaster used to clean aircraft parts. Federal regulations require a hazardous waste determination be performed on all solid waste streams. No waste characterization has been performed on the waste stream

P 1: Base Findings Data.txt - 1:138 (694:695) (Super)  
Codes: [Documentation]



The base does not maintain a copy of HQ/USAF/CE Policy Letter, Air Force Recycling Policy, 13 October 1993

P 1: Base Findings Data.txt - 1:139 (697:699) (Super)  
Codes: [Documentation]

The dispensing pumps are equipped with an emergency shutoff switch as required, and it is positioned at a remote location away from the pumps. However, it is not clearly identified as an emergency stop switch

P 1: Base Findings Data.txt - 1:146 (725:727) (Super)  
Codes: [Documentation]

Two fuel containers stored in the flammables locker were not labeled with their contents. One 2-1/2 gallon container and one 5-gallon container did not indicate what type of fuel was contained

P 1: Base Findings Data.txt - 1:147 (729:732) (Super)  
Codes: [Documentation]

Unlabeled 5-gallon buckets of used oil (3) and hydraulic fluid (2) at the Air Combat Manuevering Instrumentation (ACMI facility) at Carrabelle. Hydraulic fluid buckets had no lid and were covered with an old metal sign. A 55-gallon drum of used oil and diesel fuel filter was not labealed and drum lid locking ring was not in-place

P 1: Base Findings Data.txt - 1:148 (734:735) (Super)  
Codes: [Documentation]

A tank used for cleaning paint guns contained an unknown solvent. An employee would have no idea what the cleaning substance was or its potential hazards

P 1: Base Findings Data.txt - 1:152 (757:757) (Super)  
Codes: [Documentation]

AFOSH Std. 161-21 and AAFI 48-101 were missing from the Hazard Communication binder



P 1: Base Findings Data.txt - 1:155 (772:775) (Super)  
Codes: [Documentation]

Records of generation and disposal of Gila Bend AFAP hazardous wastes are not maintained. Since Gila Bend AFAP is a conditionally exempt, small quantity generator, RCRA does not require the maintenance of these records on Gila Bend AFAP hazardous wastes. Air Force policy, however, requires the maintenance of these records for all hazardous waste generated

P 1: Base Findings Data.txt - 1:164 (830:834) (Super)  
Codes: [Documentation]

There are five ASTs inside a secondary containment area at 9738. One of these tanks does not have any markings. The ASTs at Bonita Bay Marina and Carrabelle air combat maneuver, as instrumentation facility have inadequate markings. The requirements for Product and Safety Markings are: 1) fuel type, 2) display no smoking signs, and 3) position markings for visibility from each approach (or use multiple markings)

P 1: Base Findings Data.txt - 1:165 (836:838) (Super)  
Codes: [Documentation]

The 500-gallon sprayer does not have a permanent label indicating the sprayer is ""Contaminated with Pesticides."" A removable magnetic placard is affixed only when the sprayer is being used

P 1: Base Findings Data.txt - 1:175 (887:889) (Super)  
Codes: [Documentation]

The 2,000 underground support tank was not marked. The requirements for product and safety markings are: 1) fuel type, 2) no smoking signs, 3) position markings for visibility from each approach

P 1: Base Findings Data.txt - 1:176 (891:891) (Super)  
Codes: [Documentation]

Three underground tanks are not marked with ""No Smoking"" signs

P 1: Base Findings Data.txt - 1:177 (893:898) (Super)  
Codes: [Documentation]



TNRCC Standard Exemption No. 75 requires that paint usage data be recorded monthly and a report produced that represents hours of operation each day and emissions from each source in pounds per hour, pounds per day, pounds per week and tons emitted from the site during the previous 12-month period. Each monthly report must be completed by the 15th of the following month. Monthly reports are not being produced for this paint booth. Additionally, the registration incorrectly reflects the location of this paint booth as 5007

P 1: Base Findings Data.txt - 1:186 (950:950) (Super)  
Codes: [Documentation]

Pest management plan needs signature and transmittal page

P 1: Base Findings Data.txt - 1:190 (966:967) (Super)  
Codes: [Documentation]

A container of adhesive manufactured by Macklanburg Duncan had a torn label which was not legible with hazardous warning information and was not on the chemical inventory

P 1: Base Findings Data.txt - 1:192 (979:980) (Super)  
Codes: [Documentation]

AF Forms 3952, Hazardous Material Authorization Request Forms, were not maintained at the workcenter where hazardous materials were authorized for use

P 1: Base Findings Data.txt - 1:214 (1086:1091) (Super)  
Codes: [Documentation]

A Material Safety Data Sheet (MSDS) for 8040-00-598-5164 was in an archive file. The hazardous material information was never retrieved for the MSDS. The MSDS was blank. 29 CFR 1910.1200, Appendix E, Subpart Z (B) states that the role of the MSDS under the rule is to provide detailed information on each hazardous chemical including its potential hazardous effects, its physical and chemical characteristics, and recommendations for appropriate protective measures



P 1: Base Findings Data.txt - 1:225 (1155:1157) (Super)  
Codes: [Documentation]

The hazardous material pharmacy is currently updating the Environmental Management Information System with a CEMAS inventory of hazardous material. This operation has not been completed however it is ongoing

P 1: Base Findings Data.txt - 1:232 (1181:1183) (Super)  
Codes: [Documentation]

and 3) Annex D, para 3, specifies contractor notification options. One option that is not included is performing a detailed asbestos survey of a building before a project, if the presence of asbestos cannot be adequately ascertained from available data

P 1: Base Findings Data.txt - 1:234 (1187:1189) (Super)  
Codes: [Documentation]

Service contracts contain a deliverable of the pest control company business and operator certification. Certificates on file are expired. Contacted base contracting officer who requested the contractor fax the documents ASAP

P 1: Base Findings Data.txt - 1:236 (1196:1200) (Super)  
Codes: [Documentation]

State regulations require a water system emergency operation plan that details steps the water system will take to assure continuation of service in several specific situations. Gila Bend AFAP water plant operating instructions address situations of water system component maintenance, but there are many state planning requirements that are not addressed (for example, the provision of alternate sources of water during an emergency interruption of service)

P 1: Base Findings Data.txt - 1:270 (1369:1372) (Super)  
Codes: [Documentation]

The chemical products Formula 2001 Protectant, Pine Oil Cleanser, Multipurpose Soap Cleanser, various types of air fresheners, floor wax, and simple green cleanser did not have a corresponding MSDS. As required by 29 CFR 1910.1200, all hazardous materials require MSDSs for employees to reference



P 1: Base Findings Data.txt - 1:280 (1426:1435) (Super)  
Codes: [Documentation]

The administrative record (AR) is required to be located at the CEV Office. The AR must be maintained and updated as significant events occur in the IRP. The base legal office must review the contents of the AR to ensure it is complete but does not contain extraneous documents.

An administrative record exists in the Environmental Flight Offices, but it contains no documents after 3 Jan 95, although significant changes have occurred in the program such as the EPA RCRA 3008(h) order

P 1: Base Findings Data.txt - 1:302 (1552:1555) (Super)  
Codes: [Documentation]

Ten 55-gallon drums were found with no labels. Although RCRA does not require the labeling of nonhazardous drums, it is suggested that consistent labeling procedures be employed to avoid confusion and concern at areas where both hazardous and nonhazardous waste are being generated

P 1: Base Findings Data.txt - 1:318 (1642:1644) (Super)  
Codes: [Documentation]

The HazCom binder contains an excessive number of Material Safety Data Sheets (MSDS)s for materials which are no longer authorized or are not listed on the work center's Chemical Authorization Listing

P 1: Base Findings Data.txt - 1:335 (1731:1738) (Super)  
Codes: [Documentation]

Two containers of Lube Oil Aircraft Turbine (9150-00-985-9099) and four spray containers containing hydraulic fluid had improper hazardous warning labels. Containers were labeled with the name, address, and manufacturer of material, but no hazardous warnings. The NFPA labels were affixed to the containers; however, these labels do not meet the Air Force specific requirements of AFOSH 161-21. Containers of hazardous materials brought into or used within an installation should be labeled, tagged, and marked with the following: identity of



hazardous materials; appropriate hazardous warnings; name, address, and phone number of manufacturer. When available, DD Form 2521 or 2522 Hazardous Chemical Warning labels should be used

P 1: Base Findings Data.txt - 1:337 (1751:1754) (Super)  
Codes: [Documentation]

The material safety data sheets (MSDS) were unorganized in the binder. The individual tasked located the MSDS by turning pages individually. If an individual were to come into contact with an acid solution causing burns, quick reaction is of the utmost importance. This includes finding an MSDS immediately

P 1: Base Findings Data.txt - 1:355 (1846:1849) (Super)  
Codes: [Documentation]

Mr. Plata has a signed letter by Bioenvironmental Engineering authorizing him to train individuals in his workcenter on hazardous materials. The 12th AMO has established a Core Automated Maintenance System Course code for tracking this training. This course code was not established for Mr. Plata

---

Code: Financial {4-1}

P 1: Base Findings Data.txt - 1:20 (91:100) (Super)  
Codes: [Financial]

TK #17 does not have impermeable diking for spill containment. The tank also lacks proper spill controls as it has neither high level alarms or automatic high-level shut-off valves (one or the other is required). Tank #17 loading/unloading header does not have secondary containment for spill control. A project has been designed and submitted to upgrade Tank 17; however, a second option may be to request DFSC money to construct an above-ground 10,000-gallon vault tank at the military service station and equip it with a fillstand arm and secondary containment. The second option is attractive because it enables you to deactivate an aging system, eliminates the need for costly upgrades to an old system, and eliminates the need to double handle diesel fuel as vendor deliveries could be made directly to the service station

P 1: Base Findings Data.txt - 1:21 (102:103) (Super)



Codes: [Financial]

The loading/unloading facility at the JP8 storage tanks does not have secondary spill containment. A project has been designed and submitted for Defense Fuel Supply Center funding

P 1: Base Findings Data.txt - 1:28 (135:144) (Super)

Codes: [Financial]

The golf course maintenance buildings are used to store golf course equipment valued at \$200K and to support golf course maintenance, including storing pesticides, fertilizer, seed, etc. The Quonset hut is substandard and contains hazards to health and safety such as no potable water, inadequate electrical services, dangerous wiring, poor lighting. The pesticide storage and mixing could be written up for about 20 item, mostly structural deficiencies. There is no heat, and water stands in the shop during storms. The contractors building (Bldg 30) where golf course maintenance is scheduled to move next year is also inadequate and substandard. There are numerous safety and fire write-ups on these three facilities. Project No. 98-5003, Construct New Golf Course Maintenance Facility, has not been started, programmed, planned, or funded

P 1: Base Findings Data.txt - 1:163 (823:828) (Super)

Codes: [Financial]

AFI 32-7080 requires that a P2 Opportunity Assessment (OA) shall be conducted on each waste-generating activity on a recurring basis. The OA should provide a systematic review of the waste-generating activities and waste streams. It should also examine total waste generation by type and volume of constituents and determine the most economical minimization option. No P2 OA has been conducted. Altus was undergoing A-76 study while other bases in AETC received contract support to prepare OA's, and Altus was excluded from the HQ AETC contract

---

Code: Guidance {7-1}

P 1: Base Findings Data.txt - 1:30 (151:154) (Super)

Codes: [Guidance]

No roof mounted ventilation fan that discharges vertically in mixing room. Existing fan is wall-mounted and discharges horizontally. The management



action plan from previous finding states there is no environmental or industrial hygiene concerns with ventilation system as it is. This is false. Anyone in the area of the vent would be exposed to toxic vapors

P 1: Base Findings Data.txt - 1:111 (545:545) (Super)  
Codes: [Guidance]

No person has been designated to serve as the Qualified Recycling Program Manager

P 1: Base Findings Data.txt - 1:114 (560:564) (Super)  
Codes: [Guidance]

Procedures at the paint booth include cleaning the outside of the paint guns with methyl ethyl ketone (MEK) and the paint guns interior by spraying the solvent directly into the air. The sprayed solvent is not containerized and may be considered unpermitted treatment of a hazardous waste. MEK is an F-listed (F005) RCRA hazardous waste. The spent solvent must be handled, stored, and disposed of as hazardous waste

P 1: Base Findings Data.txt - 1:141 (704:704) (Super)  
Codes: [Guidance]

Previously identified in Internal ECAMP. Plan is being prepared

P 1: Base Findings Data.txt - 1:199 (1009:1013) (Super)  
Codes: [Guidance]

Shop personnel had established an authorized smoking break area directly behind the Corrosion Control Flammable Storage Building, well within the 50-ft limit. Six shop members were observed smoking in this area. Personnel were immediately informed of this safety violation. The shop supervisor took immediate action to correct the situation. The building did not have a ""Flammable, Keep Fire Away"" sign posted on that particular side

P 1: Base Findings Data.txt - 1:294 (1503:1505) (Super)  
Codes: [Guidance]

56 CES is making progress in its cathodic protection program. 56 CES needs to implement an initial close interval, anode bed, and annual corrosion survey of all impressed current and sacrificial systems



P 1: Base Findings Data.txt - 1:338 (1756:1758) (Super)  
Codes: [Guidance]

The Base is required to have an appointed program manager for the backflow prevention program. This person is normally in the utilities maintenance section. No document from BCE making this designation can be found

---

Code: Human {2-1}

P 1: Base Findings Data.txt - 1:1 (1:7) (Super)  
Codes: [Human]

Excessive workload exists for single manpower authorization. 1996 EPA RCRA 3008(h) order mandates additional work and shorter timetable than IRP had projected. EPA order requires investigation of 25 sites. Previously, the IRP only had 16 active sites. AF and MAJCOM policy requires installation to continue meeting all CERCLA requirements such as public review and administrative records in addition to AF internal requirements such as Restoration Advisory Boards and Management Action Plans. Workload has more than doubled, without increased manpower. Program is deteriorating due to insufficient manning

P 1: Base Findings Data.txt - 1:245 (1242:1250) (Super)  
Codes: [Human]

Although the environmental flight staff appear competent, capable, knowledgeable, and motivated, they are impeded by insufficient manpower to the extent that the program has suffered. Action is underway to fill the IRP manager position, but the vacant Captain slot should be filled or converted to civilian to bring manning up to 100%. Another critical problem is the absence of reliable and capable administrative support. Currently, a vacant GS-4 temporary position exists, but recruitment of a qualified clerical worker has been unsuccessful due to the temporary status of the position. This problem is manifested in many ways. For example, official files documenting the membership, actions, charters, and decisions of the EPC and its four subcommittees are not properly maintained in the Environmental Flight

---



Code: Material {6-1}

P 1: Base Findings Data.txt - 1:31 (156:162) (Super)  
Codes: [Material]

The base fueling station regularly receives fuel in bulk by means of a commercial tank truck. However, fuel is occasionally issued to these tanks through the use of a C-300 transport truck from POL. When this vehicle is used, Stage I vapor recovery is not practiced as required by Maricopa County regulations. Fuels personnel indicated that the reason for this is that the tank vapor recovery equipment associated with the tank is not compatible with that of the truck. Luke AFB is located in an ozone nonattainment area which has recently been redesignated from a ""moderate"" to a ""serious"" classification

P 1: Base Findings Data.txt - 1:38 (192:195) (Super)  
Codes: [Material]

The exterior of TK #6044 is severely corroded and tank integrity is in question. The degradation of the tank exterior is not only threatening tank integrity, it is also weakening access stair supports mounted on the tank posing potential safety hazard. By 31 December 1999, existing ASTs must have exterior coatings that provide continuous protection

P 1: Base Findings Data.txt - 1:39 (197:201) (Super)  
Codes: [Material]

A manometer is used to measure pressure drop across filters in paint booths. An increase in pressure indicates that the filters are becoming plugged and are not efficiently removing particulate matter. Beyond visual observation of the filters, the manometer is the only way to determine if the filters are becoming plugged. Apparently, the manometer was recently broken and needs to be replaced. There are no current regulations requiring a manometer

P 1: Base Findings Data.txt - 1:46 (238:239) (Super)  
Codes: [Material]

The sacrificial anode cathodic protection system for storage tanks and underground piping system is inoperative

P 1: Base Findings Data.txt - 1:53 (263:267) (Super)



Codes: [Material]

Automatic tank gauging controls have the capability to perform leak detection. This method is being used for the premium gas tank but not the regular. Facility is in compliance because tightness test and inventory controls are being used. However, this method will no longer be valid after the 22 Dec 98 upgrade deadline. At that time, the facility must use an installed leak detection system that complies with the requirements of 40 CFR 280.41

P 1: Base Findings Data.txt - 1:198 (1004:1007) (Super)

Codes: [Material]

The 944th Fighter Group utilizes a small amount of solvent cleaner at this location for the purpose of brake cleaning. During the assessment, it was discovered that the lid was left open on the machine, allowing the solvent to volatilize into the atmosphere. The lid could not actually be fully shut because the electrical cord had been improperly routed

---

Code: Misc {10-1}

P 1: Base Findings Data.txt - 1:13 (61:66) (Super)

Codes: [Misc]

The Corrosion Control facility consists of two separate hangars where the painting of complete aircraft and associated parts occurs. The exhaust systems for each of these hangars are designed to draw air through a filter bank before entering the atmosphere. Each exhaust duct is equipped with louvers outside the building. Many of these louvers are not working properly and are restricting the airflow through the exhaust, thus causing an inefficiency in the particulate control system

P 1: Base Findings Data.txt - 1:23 (115:116) (Super)

Codes: [Misc]

The sink furnished in the mixing room at Bldg 387 does not have a continuous draining counter area. The current counter top is just Formica with no containment or splash boards

P 1: Base Findings Data.txt - 1:26 (129:130) (Super)



Codes: [Misc]

Containment dike electric pump has no way to lock out on/off control. Anyone could pump out dike without following proper protocol (inspecting for standing fuel or sheen on water)

P 1: Base Findings Data.txt - 1:29 (146:149) (Super)  
Codes: [Misc]

The Wood Hobby Shop operates a paint booth for use in occasional coating of wood products. The filters in the booth were observed as not completely covering the face of the exhaust duct. Shop personnel indicated that wind outside the building sometimes blows the filters out of place. These gaps lead to inadequate filtration of the design control device

P 1: Base Findings Data.txt - 1:45 (233:236) (Super)  
Codes: [Misc]

Corrosion Control operates a large bead blasting enclosure for surface preparation of parts prior to painting. The intake air wall has several holes where the intake filter is not properly covering the opening. These holes allow particulate matter to escape the designed enclosure and control efficiency of the booth and its collection system

P 1: Base Findings Data.txt - 1:48 (244:247) (Super)  
Codes: [Misc]

Most recent sampling (12/17/97) of water in both areas revealed lead levels exceeding regulatory limits of 15 ppb. State of Florida has issued a letter to the base requiring resampling and notification to users. There is no hazard to employees because alternative drinking water supplies (bottled or reverse osmosis) are used for human consumption

P 1: Base Findings Data.txt - 1:49 (249:251) (Super)  
Codes: [Misc]

Waste diesel fuel filters are drained and managed as hazardous waste. Past experience has shown that diesel fuel filters typically do not exhibit hazardous waste characteristics (either ignitability or toxicity)



P 1: Base Findings Data.txt - 1:50 (253:256) (Super)  
Codes: [Misc]

Pesticides received from vendors are transferred from wooden pallets to fiberglass pallets. These non-porous pallets are safer since any spilled material will not be absorbed by the pallet which could require the pallet to be disposed of as hazardous waste. The plastic pallets can be steam cleaned for decontamination

P 1: Base Findings Data.txt - 1:51 (258:261) (Super)  
Codes: [Misc]

Over the course of this inspection, three different types of ATG systems were observed at UST installations. The systems included Tidel, Petro-Vend, and Ree Jacket. It would be a good practice to generate a one- or two-page "cheat sheet" on the operation of the systems, including persons or companies to contact in the event of a malfunction

P 1: Base Findings Data.txt - 1:116 (570:575) (Super)  
Codes: [Misc]

Base has archeological items needing curation and in curation. Funding for curation should be a level one requirement. Verification of curatorial contractor qualifications for existing collection is needed under 36 CFR 79.9, C.20.3-9: 20.3 - Administrative Records; 20.4 - Curatorial Services Qualifications; 20.5 - Curatorial Physical Plant; 20.6 - Curatorial Professional Qualifications; 20.7 - Curatorial Services Security; 20.8 - Collection Availability; and 20.9 - Collection Inspection and Inventories

---

Code: Notification {5-1}

P 1: Base Findings Data.txt - 1:4 (18:21) (Super)  
Codes: [Notification]

Quarterly reports of pesticide use on base should be generated and submitted to MAJCOM and the Randolph AFB BEE. However, due to computer problems, these reports are not consistently being generated and MAJCOM and the Randolph AFB BEE are not being notified. However, the information to generate these reports is being tracked and is readily available



P 1: Base Findings Data.txt - 1:57 (297:299) (Super)  
Codes: [Notification]

The medical waste incinerator has been removed. Since the incinerator was permitted, TNRCC should be notified of its removal. Such notification will document the actual date of closure and will assist the base in verifying compliance with state permits

P 1: Base Findings Data.txt - 1:150 (745:750) (Super)  
Codes: [Notification]

All gasoline tank trucks at major emission sources in Pulaski County are required by state regulation to be pressure tested. Although the MOGAS C-300 used by Base Fuels is pressure tested on an annual basis, it does not appear that the notifications to ADPCE, which are required before and after the test, have been made. These requirements are detailed in the Documentation section of the ADPCE report ""Pressure-Vacuum Test Procedure for Leak-Tightness of Gasoline Trucks.""

P 1: Base Findings Data.txt - 1:188 (956:961) (Super)  
Codes: [Notification]

According to 40 CFR 63 Subpart T (Solvent Cleaning NESHAP), solvent cleaning machines must meet specified requirements. Facilities subject to this regulation are required to submit one or more reports including an initial notification report and a compliance report. The base has not notified EPA of the presence of an immersion cold cleaning machine at the Lawnmower Shop. The cold cleaning machine uses a solvent that is 50-55 percent methylene chloride by weight

P 1: Base Findings Data.txt - 1:257 (1315:1319) (Super)  
Codes: [Notification]

Federal regulation (40 CFR 61.145) requires notification of the intent to demolish or renovate structures containing regulated asbestos-containing materials. This notification must be received by Maricopa County at least 10 days before the start of demolition or removal. Two notification forms, of four reviewed, were submitted less than 10 days before the projected start date of the abatement



---

Code: Performance {103-3}

P 1: Base Findings Data.txt - 1:3 (15:16) (Super)  
Codes: [Performance]

Diesel tank did not have proper product identification markings and the gauge hatch was not secured

P 1: Base Findings Data.txt - 1:5 (23:30) (Super)  
Codes: [Performance]

The vacuum lead dust recovery system (bullet catcher) at the small arms firing range is not operational. As a result, lead dust is not being collected and containerized, but is dispersing into the air and settling onto the ground. It is reported that the lead dust in the air after firing exercises is thick enough to reduce visibility to the targets and takes up to several minutes to clear. In addition, lead dust was left on the outside of the equipment and on the ground after maintenance of the unit. This material is a hazardous waste and must be containerized and managed appropriately. The levels of lead in the breathing zone during exercises should also be monitored to determine if they exceed OSHA regulations

P 1: Base Findings Data.txt - 1:7 (35:37) (Super)  
Codes: [Performance]

Ventilation for the chemical storage rooms in Bldg 387 is currently discharged out the side of the building. These fans are discharging vapors from these storage areas directly into the path of employees walking or riding by. Systems need to be roof mounted

P 1: Base Findings Data.txt - 1:10 (47:52) (Super)  
Codes: [Performance]

After reviewing AF Form 3952 at the HazMat Pharmacy, it was apparent that CE is reviewing AF Forms 3952 and applying approval stamps to the forms; however, information is not input into the Environmental portion of the Environmental Management Information System (EMIS). SE is also required to review and approve AF Forms 3952 and update specific information in the EMIS



database. None of the procedures are being complied with by Ground Safety personnel as required by AFI 32-7086

P 1: Base Findings Data.txt - 1:12 (56:59) (Super)  
Codes: [Performance]

Spent glass bead blast media is leaking from the equipment during operation. The material was found accumulating in a small pile on the ground, as well as coating the equipment exterior with a fine dust. This material is a hazardous waste, and must be handled and contained in the appropriate manner

P 1: Base Findings Data.txt - 1:15 (70:74) (Super)  
Codes: [Performance]

At the present time, the office area, breakroom, shower, locker room, and laundry/changing areas in Bldg 347 are located in the same area. Pesticide applicators must walk through either the office area or the break area to reach the changing/laundry room. This situation presents a potential to contaminate clean areas and expose individuals to pesticides. A true transitional area needs to be established in Bldg. 387

P 1: Base Findings Data.txt - 1:16 (76:79) (Super)  
Codes: [Performance]

Tank car and tank truck loading/unloading facilities must have spill containment systems large enough to hold at least a maximum capacity spill from any single compartment of a tank car or tank truck. The bulk storage offloading area is not designed to contain a spill as required by 40 CFR 112.7

P 1: Base Findings Data.txt - 1:17 (81:82) (Super)  
Codes: [Performance]

There is currently no covered storage in Bldg 387 for pesticide dispersal equipment that has to be stored outdoors

P 1: Base Findings Data.txt - 1:18 (84:86) (Super)  
Codes: [Performance]



Tank truck loading/unloading racks are required to be equipped with a spill containment system. Currently, the JP8 loading area does not have secondary containment. This is a carryover finding from the 1996 external ECAMP

P 1: Base Findings Data.txt - 1:19 (88:89) (Super)  
Codes: [Performance]

There is no "on" light for the ventilation switches that control exhaust fans in storage and mixing areas

P 1: Base Findings Data.txt - 1:22 (105:113) (Super)  
Codes: [Performance]

Building 315 contains two areas where aircraft painting and depainting operations occur. This facility is subject to the Aerospace NESHAP (Subpart GG) which will require compliance by September 1, 1998. Several aspects of the design and operational practices of this facility do not currently meet the requirements of this regulation. These include inadequate particulate exhaust filters, missing manometer, inadequate recordkeeping/reporting procedures, improper spray gun cleaning procedures, and non-compliant spray gun equipment. Additionally, it is suspected that adequate ventilation may not be present during painting operations, constituting an OSHA violation. More detail can be found in the "Aerospace NESHAP Evaluation of Aircraft Painting Hangar 315" completed in October 1997

P 1: Base Findings Data.txt - 1:24 (118:123) (Super)  
Codes: [Performance]

One of the solvent degreasers at this location contains Safety Kleen Solvent 105, which is a petroleum based product comprised of 100% VOCs. The machine is equipped with a spray nozzle which is used to provide a shower type spray when used to clean parts. This practice increases the rate of volatilization of the solvent into the atmosphere. Luke AFB is located in an ozone nonattainment area which has been recently redesignated from a "moderate" to a "serious" classification

P 1: Base Findings Data.txt - 1:25 (125:127) (Super)  
Codes: [Performance]



Above-ground storage tanks with capacities of 660 gallons and greater must have impervious secondary containment. The dikes at the bulk storage area are not impervious enough to contain a spill

P 1: Base Findings Data.txt - 1:27 (132:133) (Super)  
Codes: [Performance]

Several switches control the vent fan in pesticide storage. Indicator lights should be installed to prevent the fan from being inadvertently turned off

P 1: Base Findings Data.txt - 1:32 (164:167) (Super)  
Codes: [Performance]

Water obtained from Bay County water system is typically 0.6 - 0.8 ppm chlorine at base entry. At distant points, the chlorine level often drops to 0.1 ppm, and is therefore more vulnerable to bacterial contamination. There is no provision for additional chlorination within the main base water supply

P 1: Base Findings Data.txt - 1:33 (169:169) (Super)  
Codes: [Performance]

There is currently no adequate mixing facility at the golf course

P 1: Base Findings Data.txt - 1:34 (171:176) (Super)  
Codes: [Performance]

One of the solvent degreasers at this location contains Penetone, which is a petroleum based product comprised of 100% VOCs. The machine is equipped with a spray nozzle which is used to provide a shower type spray when used to clean parts. This practice increases the rate of volatilization of the solvent into the atmosphere. Luke AFB is located in an ozone nonattainment area which has been recently redesignated from a ""moderate"" to a ""serious"" classification

P 1: Base Findings Data.txt - 1:36 (185:186) (Super)  
Codes: [Performance]

There was evidence of vehicle tank overfills at the diesel fuel dispensers, and there were no spill clean-up materials available



P 1: Base Findings Data.txt - 1:37 (188:190) (Super)  
Codes: [Performance]

Bead blast cyclone and bag filter are leaking dust. This dust is settling on the floor and may be suspended into the air. 30 TAC Section 101.7(a) requires that air pollution control equipment be maintained in good working order

P 1: Base Findings Data.txt - 1:41 (206:207) (Super)  
Codes: [Performance]

Containment dikes on tanks 407 and 409 were not impervious and enabled seepage through unsealed seams in the concrete (Ref CFR 112.7)

P 1: Base Findings Data.txt - 1:42 (209:217) (Super)  
Codes: [Performance]

Hospital radiology department is not treating spent x-ray fixer adequately to remove silver to the maximum extent. Base wastewater treatment plant personnel were recently made aware by Bay County utilities of high silver levels in a sanitary sewer near the hospital. Inspection of hospital records revealed that treated fixer from the hospital was routinely 20 ppm - 50 ppm in silver content. A properly operated and maintained silver recovery unit should be capable of achieving less than 5 ppm silver content in the effluent. Excessive silver levels in base wastewater could prompt Bay County to order more effective pretreatment, under provisions of the Clean Water Act. This will be more important at the time the base is attached to the new Bay County plant in 1999

P 1: Base Findings Data.txt - 1:43 (219:222) (Super)  
Codes: [Performance]

Corrosion Control operates a small drive-through booth for painting aircraft parts. Exhaust filters in the booth were observed to be heavily coated with paint overspray during the assessment. Excessive buildup on the face of the filters can lead to abnormally low exhaust flowrates and eventual breakthrough of the filter material

P 1: Base Findings Data.txt - 1:54 (275:282) (Super)  
Codes: [Performance]



Golf course maintenance area is not well designed to prevent discharge of oily and solid contaminants directly to Dysart drain during rain events. Also, there are numerous areas (notably the banks along Dysart drain behind the maintenance area) where excessive soil erosion is evident. At present, there is no regulatory violation of stormwater regulations, as these are non-industrial areas and are currently unregulated. However, the proposed EPA Phase II stormwater regulations, expected to take effect sometime in the year 2000, will mandate the use of best management practices and structural controls to prevent the release of contamination to stormwater

P 1: Base Findings Data.txt - 1:58 (301:304) (Super)  
Codes: [Performance]

Paper bags of pesticide granules were stacked along an outside chain link wall, possibly exposed to rain. The chain link was covered with plastic cloth sunshade that would not provide protection from rain. Recommend either moving the display or installing a better weather barrier

P 1: Base Findings Data.txt - 1:63 (332:333) (Super)  
Codes: [Performance]

Fertilizer and potted plants and proposed pesticide storage area are located near a floor drain

P 1: Base Findings Data.txt - 1:66 (347:351) (Super)  
Codes: [Performance]

The IAP at the Radiophysics lab is used to contain spent lead and a spent casting material used to form radiological shields. Although the casting material ""gypsum"" is being managed as a hazardous waste, no waste stream characterization has been conducted to verify hazardous waste characteristics. The lead and casting material are used in separate and distinct processes and should have separate IAPs established for their disposal

P 1: Base Findings Data.txt - 1:69 (365:367) (Super)  
Codes: [Performance]

Initial accumulation points for flammable materials are located inside the maintenance paint barn and the Auto Crafts paint booth. 29 CFR 1910.107



requires that no more than one day's supply of flammable materials will be stored inside a spray paint booth or room

P 1: Base Findings Data.txt - 1:74 (392:393) (Super)  
Codes: [Performance]

There is no outdoor covered hardstand/parking apron with containment for pesticide dispersal equipment

P 1: Base Findings Data.txt - 1:75 (395:398) (Super)  
Codes: [Performance]

AFI 32-7001, Environmental Budgeting, requires all installations to maintain current financial data such as obligations and commitments in the A-106. This installation is not maintaining data on funds obligation in the A-106. As a result, other, less efficient methods are necessary to report real-time data

P 1: Base Findings Data.txt - 1:80 (422:423) (Super)  
Codes: [Performance]

No lighted ventilation control switch to indicate ""on"" at the entrances to pesticide store rooms

P 1: Base Findings Data.txt - 1:81 (425:428) (Super)  
Codes: [Performance]

No signs with ""DANGER"", ""POISON"", and ""PESTICIDE STORAGE AREA"" are on the fence around the pesticide storage facility. No sign in the hardstand area stating ""CLOSE DRAIN WHILE HANDLING PESTICIDES ON HARDSTAND."" No signs near pit valve stating ""USE VALVE TO DRAIN WASH WATER AND RAIN"" and ""RECOVER PESTICIDE SPILLS.""

P 1: Base Findings Data.txt - 1:82 (430:431) (Super)  
Codes: [Performance]

No signs with ""DANGER"", ""POISON"", and ""PESTICIDE STORAGE AREA"" are on the fence around the pesticide storage facility



P 1: Base Findings Data.txt - 1:85 (445:446) (Super)  
Codes: [Performance]

Degreaser nozzle on the AGE Maintenance degreaser allows for degreasing solvent to spray. 30 TAC 106-454 requires that only solid stream nozzles be used

P 1: Base Findings Data.txt - 1:86 (448:449) (Super)  
Codes: [Performance]

No roof mounted ventilation that discharges vertically in pesticide store rooms. Existing fans are wall-mounted and discharge horizontally

P 1: Base Findings Data.txt - 1:88 (455:456) (Super)  
Codes: [Performance]

There is no 4-inch curb around the outdoor hardstand and parking apron to contain possible spills of pesticide dispersal equipment stored outside

P 1: Base Findings Data.txt - 1:104 (515:520) (Super)  
Codes: [Performance]

The Bioenvironmental Engineering shop currently collects 15 water samples from representative points within the 2 installation water distribution systems. 30 TAC, 290.106(a)92) specifies the minimum number of samples required per month based on the population served. Currently Lackland collects 16 samples. The base population is 22,800 employees and 34,324 basic trainees per year. The minimum number for a population of 21,501-25,000 is 25 samples per month. Samples are to be specified in a site sampling plan

P 1: Base Findings Data.txt - 1:109 (537:539) (Super)  
Codes: [Performance]

The 1998 A-106 report, printed on 20 Mar 98, did not have any obligated funds shown and very few line items validated in both environmental compliance, pollution prevention, and conservation programs

P 1: Base Findings Data.txt - 1:119 (590:593) (Super)  
Codes: [Performance]



AFM 67-1, Vol. #1, Part III, page 1-80, para. 1-94, requires daily inventories to be performed on all fuel storage tanks that are not equipped with leak detection. The 189th Military Service Station tanks are not hooked up to a leak detection system and are not being inventoried on a daily basis

P 1: Base Findings Data.txt - 1:132 (660:666) (Super)  
Codes: [Performance]

The Wood Hobby Shop maintains a paint booth in which base personnel are allowed to refinish personal wood products. There are no closed containers present at the site where customers can dispose of solvent laden rags and other waste products to prevent unused VOCs from volatilizing into the atmosphere. In addition, paint guns are currently cleaned by spraying solvent through them into the booth's filter bank which is not designed to control VOCs. Luke AFB is located in an ozone nonattainment area which has been recently redesignated from a "moderate" to a "serious" classification

P 1: Base Findings Data.txt - 1:134 (676:677) (Super)  
Codes: [Performance]

Two 55-gallon drums of motor oil mounted horizontally for dispensing had no secondary spill containment

P 1: Base Findings Data.txt - 1:157 (782:787) (Super)  
Codes: [Performance]

Fifty-five gallon drums are used at the Hobby Shop to contain paint-related wastes, sanding wastes, and spent glass bead media. In each case, the metal drums are located at accumulation points outside and are exposed to weather. In addition, the drum used to contain sanding wastes has been placed directly outside on the ground rather than on a pallet or secondary containment basin. These drums should be protected from conditions which could result in corrosion and possible leakage

P 1: Base Findings Data.txt - 1:158 (789:796) (Super)  
Codes: [Performance]

The IAPs for bead blast residue and chromium-contaminated gloves at Bldgs. 235 and 1236, respectively, are not located near the points of accumulation. The IAP at Bldg. 235 was located outside of the building containing the bead blaster,



across the parking lot; and the IAP at Bldg. 1236 was located approximately 1/2 mile from the point of generation. A letter of instruction from ADEQ, dated 8 April 1993, specifically identified this as an area of noncompliance. In addition, similar findings were reported in the 1996 External ECAMP. Federal regulations require that an IAP be established at or near the point of generation where wastes initially accumulate

P 1: Base Findings Data.txt - 1:162 (818:821) (Super)  
Codes: [Performance]

At Bldg 235, Auto Hobby Shop, and Bldg 2201, Golf Course Maintenance, gasoline was stored in unapproved 5-gallon plastic containers. Title 29 Part 1910.106(d) requires that only approved containers shall be used. An approved container is one that meets DOT, specifically United Nations (UN) specification packaging

P 1: Base Findings Data.txt - 1:166 (840:846) (Super)  
Codes: [Performance]

In reliance upon a 2 September 1994 letter from the Florida Department of Health and Rehabilitative Services (HRS) District 2 Biomedical Waste Coordinator, which states that the Florida Biomedical Waste Rule does not apply to Tyndall AFB, the base does not fully comply with that rule. Specifically, the base lacks an annual generator permit, lacks a biomedical waste operating plan that includes all information required by the Florida rule, and does not have shipment records for the past three years. Florida law does not exempt federal agencies from compliance with the biomedical waste rule

P 1: Base Findings Data.txt - 1:167 (848:849) (Super)  
Codes: [Performance]

No lighted ventilation control switch to indicate ""on"" at the entrances to pesticide store rooms

P 1: Base Findings Data.txt - 1:178 (900:904) (Super)  
Codes: [Performance]

TNRCC Standard Exemption No. 75 requires that paint usage data be recorded monthly and a report produced that represents hours of operation each day and emissions from each source in pounds per hour, pounds per day,



pounds per week and tons emitted from the site during the previous 12-month period. Each monthly report must be completed by the 15th of the following month. Monthly reports are not being produced for this paint booth

P 1: Base Findings Data.txt - 1:181 (922:924) (Super)  
Codes: [Performance]

Compressor refrigerant lubricating oil was on the shop stock shelf but had been expired since Feb. 94. Personnel must ensure the property in their care is maintained as serviceable or discarded

P 1: Base Findings Data.txt - 1:183 (934:939) (Super)  
Codes: [Performance]

Diesel fuel filters are currently managed along with gasoline and IP-8 fuel filters as hazardous waste. Diesel filters are not likely to be a hazardous waste and could be removed from this wastestream to reduce the total volume generated. Consider performing a hazardous waste determination and conducting a waste stream determination separately for the diesel fuel filters. This is likely to demonstrate that the diesel filters are non-hazardous, reducing the total volume of hazardous waste

P 1: Base Findings Data.txt - 1:185 (947:948) (Super)  
Codes: [Performance]

Requirement needs to be addressed as most of the organizational fuel tanks (USTs) inspected. Fuel type should be identified at the fill port for the USTs

P 1: Base Findings Data.txt - 1:187 (952:954) (Super)  
Codes: [Performance]

Two containers had unidentified materials. These items were 6850-00-527-2426, Corrosion Removing Compound, and Electro Clean #379. These items are required to be labeled IAW AFOSH 161-21, 5(a), (b), (c) and 29 CFR 1910.1200

P 1: Base Findings Data.txt - 1:195 (990:994) (Super)  
Codes: [Performance]



The small bead blaster located at this facility utilizes a dust collection drawer which is required to be emptied when it is half full as stated in the O&M instructions. Personnel at the facility stated that the drawer is emptied at two-thirds or three-fourths capacity. Since this is a permitted facility and is required to properly utilize the controls permitted with the system, regulations require that this equipment be operated according to the O&M Plan

P 1: Base Findings Data.txt - 1:201 (1020:1026) (Super)  
Codes: [Performance]

QRP is not set up in accordance with AFI 32-7080. QRP is not handling recyclables from the Commissary or Base Exchange as required by AFI 32-7080, para. 3.4.1. No account into which recycling proceeds can be deposited has been set up IAW para. 3.4.1.3. Corrugated boxes are not being recycled IAW para. 3.4.1.2.1, and many boxes were found in dumpsters near Hangar 3, Hangar 73, Bldg. 241, and Bldg. 84. It is unclear who is the QRP manager (one person is officially designated QRP manager, but another performs the day-to-day responsibilities as an additional duty). The quantity of material being recycled has dropped in the last two years

P 1: Base Findings Data.txt - 1:202 (1028:1029) (Super)  
Codes: [Performance]

Several broken bags of diazinone granules were taped and stacked in with good bags. Some pesticide granules were loose in the stack and under pallets

P 1: Base Findings Data.txt - 1:206 (1042:1044) (Super)  
Codes: [Performance]

An unlabeled bottle of red hydraulic fluid was found in a flammable storage in the KC-135 phase dock hangar area. Containers of hazardous materials in the work place are required to be labeled, tagged, or marked with their contents

P 1: Base Findings Data.txt - 1:210 (1064:1066) (Super)  
Codes: [Performance]

No personnel available to discuss finding. Dike contained 5 ASTs, including one unlabeled dike is within 200 ft of waterway (B738). B5013 dike is within 50 ft of waterway and its drain is unlocked



P 1: Base Findings Data.txt - 1:213 (1084:1084) (Super)  
Codes: [Performance]

A large amount of trash is on the ground under the access stairway to a roll-off dumpster

P 1: Base Findings Data.txt - 1:222 (1141:1141) (Super)  
Codes: [Performance]

Pest control vehicles do not have spill clean up kits as required

P 1: Base Findings Data.txt - 1:224 (1151:1153) (Super)  
Codes: [Performance]

AFI 32-1052 requires routine inspections of asbestos-containing materials in buildings to ensure the material is maintained in good condition. The last documented inspection was in 1995

P 1: Base Findings Data.txt - 1:229 (1174:1176) (Super)  
Codes: [Performance]

The Asbestos Management and Operations Plan is currently in draft form. It has not been completed and approved by the EPC. This is a carry-over finding from the previous external ECAMP in 1996

P 1: Base Findings Data.txt - 1:235 (1191:1194) (Super)  
Codes: [Performance]

The MOGAS dispenser at this location is used to fuel motor vehicles. Gasoline dispensing into motor vehicles is regulated by federal regulation which requires, among other things, maximum flow rates of less than 10 gallons per minute (gpm). When this pump was tested, its flowrate was approximately 13 gpm

P 1: Base Findings Data.txt - 1:238 (1202:1205) (Super)  
Codes: [Performance]

Three vehicles in a lot next to the car wash have been left in such a state of disrepair that they appear to have been abandoned. There have been past and recurring problems with illegal/informal dump sites popping up, but base leadership is making considerable efforts to clean up and prevent recurrence



P 1: Base Findings Data.txt - 1:243 (1234:1236) (Super)  
Codes: [Performance]

Federal regulations require a device, such as a telephone or hand-held two-way radio, to be immediately accessible to personnel at the scene of operation in case of emergency. Bldg. 283 does not have a telephone and personnel working at the scene to not carry radios with them

P 1: Base Findings Data.txt - 1:244 (1238:1240) (Super)  
Codes: [Performance]

A compressed gas cylinder of Argon was not properly secured to prevent it from falling. Additionally, there were no identification tags attached to indicate whether it was full/empty or what type of gas was actually contained in the cylinder

P 1: Base Findings Data.txt - 1:246 (1252:1254) (Super)  
Codes: [Performance]

AFI 32-7042, para. 3.2.1 requires installations to develop and implement a Solid Waste Management Plan. Randolph's plan contains obsolete information. Data on recycling and solid waste disposal methods has not been updated since 6/9/97

P 1: Base Findings Data.txt - 1:249 (1262:1263) (Super)  
Codes: [Performance]

The weekly inspection log for the month of May was not completed for the first two weeks. The hazardous waste management plan requires documented inspection records be maintained

P 1: Base Findings Data.txt - 1:250 (1271:1274) (Super)  
Codes: [Performance]

The HMMP team has not ensured that all installation-level responsibilities were met for executing the HPP. Although the HAZMART has been established, timelines for bringing on-line the other HAZFO's has not been determined. Hazardous material is issued without appropriate approval and tracking



P 1: Base Findings Data.txt - 1:251 (1276:1279) (Super)  
Codes: [Performance]

Property was marked with an internally assigned MSDS tracking number; however, when the MSDS was needed, it was not filed in the appropriate binder and could not be readily produced. This was the case for items 333, 352, and 341. Current wing AFOSH supplement to 161-21 (27 Dec 95), para 2.3.5.1

P 1: Base Findings Data.txt - 1:252 (1281:1286) (Super)  
Codes: [Performance]

The Gila Bend AFAF Hazardous Waste Plan imposes more stringent standards than required by law or regulation. Some of these additional requirements are not being met. For instance, Section 4.3.9 of the plan requires hazardous waste containers to be labeled "'hazardous waste,'" but the more common practice at the installation is to label the containers with other appropriate descriptions of the contents. Also, Section 9.1.1 of the plan requires Safety Kleen solvents to be manifested, but the installation does not maintain these records

P 1: Base Findings Data.txt - 1:253 (1288:1291) (Super)  
Codes: [Performance]

Device H662-1's last test was on 1/30/97. All devices for wash rack 1051's test was on 7/23/96. 30 TAC 290.44(g) and (h) requires at least annual testing of devices. AFI 32-1066 requires a 6-month testing cycle for devices protecting severe hazards. All these devices were high hazard protection

P 1: Base Findings Data.txt - 1:254 (1293:1297) (Super)  
Codes: [Performance]

Inspection revealed a leaking fitting on the supply pipe from the day tank to the generator. There was diesel fuel on the floor of the building. The fuel had leaked outside of the building and killed the grass along the side of the building. Power Production personnel replaced the piping immediately after discovery. The spill area outside the building was excavated and clean soil replaced. Estimated spill quantity is 5 gallons



P 1: Base Findings Data.txt - 1:258 (1309:1313) (Super)  
Codes: [Performance]

40 CFR 112.7(e), 40 CFR 112.1 (d), and 29 CFR 1910.120 require personnel involved in oil handling operations to receive periodic spill prevention and response training. Little Rock AFB SPCC Plan dated February 1997, Section 13, and Fuels Operating Instruction 91-1 also state that the periodic training requirement will be met via annual training. A review of POL operator training documentation revealed that two operators were over-due on periodic (annual) training

P 1: Base Findings Data.txt - 1:259 (1321:1322) (Super)  
Codes: [Performance]

The last Solid Waste Opportunity Assessment was done in 1994. It is an annual requirement

P 1: Base Findings Data.txt - 1:262 (1328:1328) (Super)  
Codes: [Performance]

Found a 1-gallon container of Muratic acid in a flammable storage area

P 1: Base Findings Data.txt - 1:265 (1344:1344) (Super)  
Codes: [Performance]

The map of the water distribution system is outdated

P 1: Base Findings Data.txt - 1:266 (1346:1348) (Super)  
Codes: [Performance]

Initial accumulation point monitors are required to complete annual refresher training in hazardous waste management. The IAP monitor at Bldg. 951 is overdue for annual refresher training

P 1: Base Findings Data.txt - 1:271 (1374:1377) (Super)  
Codes: [Performance]

40 CFR 112.7(e)(10) and 29 CFR 1910.120 require personnel involved in oil handling operations to receive periodic spill prevention and response training. A review of fuels management training documentation (AF Forms 55) revealed that all five assigned personnel were overdue for periodic (annual) training



P 1: Base Findings Data.txt - 1:277 (1415:1416) (Super)  
Codes: [Performance]

The Hazardous Waste Management Plan for Lackland is dated 23 September, 1996. It has not been reviewed or updated to show changes in the hazardous waste management program

P 1: Base Findings Data.txt - 1:278 (1418:1419) (Super)  
Codes: [Performance]

The last documented inspection by base personnel of a facility at which the base's wastes are disposed was conducted in October 1996

P 1: Base Findings Data.txt - 1:281 (1437:1437) (Super)  
Codes: [Performance]

The INRMP was not reviewed/updated annually as required by AFI 32-7064/DODI 4715.3

P 1: Base Findings Data.txt - 1:283 (1444:1446) (Super)  
Codes: [Performance]

The base has not completed an Integrated Natural Resources Plan (INRMP), established monitoring trends in wetlands, developed fish and wildlife component plans for the INRMP, nor established Category I or Category II Classification as required

P 1: Base Findings Data.txt - 1:284 (1448:1449) (Super)  
Codes: [Performance]

The asbestos inventory has not been updated since 1990, although sampling and abatements have occurred since then

P 1: Base Findings Data.txt - 1:286 (1457:1459) (Super)  
Codes: [Performance]

Goldwater Range has a requirement under AFI 13-212 to prepare a Comprehensive Range Plan and an Integrated CRMP (ICRMP) under AFI 32-



7065. There is an additional requirement for the ongoing need for archaeological personnel to maintain consultation with tribal protocol

P 1: Base Findings Data.txt - 1:287 (1461:1462) (Super)  
Codes: [Performance]

The Hazardous Waste Management Plan for Lackland is dated 23 September, 1996. It has not been reviewed or updated to show changes in the hazardous waste management program

P 1: Base Findings Data.txt - 1:290 (1479:1482) (Super)  
Codes: [Performance]

Existing draft MAP is dated 21 Aug 96. It does not contain current schedule and cost data. It does not address the Administrative Order under Section 3008(h) of the Resource Conservation and Recovery Act (RCRA) – effective date Nov 96. In the interim since the MAP was prepared, the program has increased in scope, cost, and pace

P 1: Base Findings Data.txt - 1:304 (1561:1562) (Super)  
Codes: [Performance]

Routine building inspections to determine condition of asbestos-containing materials are not being done or documented

P 1: Base Findings Data.txt - 1:305 (1564:1565) (Super)  
Codes: [Performance]

Pest Management has no respiratory protection program. No fit testing, no periodic training, no written program, and no medical clearance to support their use of respirators

P 1: Base Findings Data.txt - 1:307 (1569:1572) (Super)  
Codes: [Performance]

Hazardous waste is present at the site in excess of 55 gallons. Federal regulations prohibit the accumulation of more than 55 gallons of hazardous waste in containers at or near the point of generation. Hazardous waste in excess



of 55 gallons must be moved to a 90-day facility within 72 hours or properly disposed at an off-site facility

P 1: Base Findings Data.txt - 1:308 (1574:1579) (Super)  
Codes: [Performance]

Paint chips known to contain chromium levels in exceedance of the regulatory limit were not properly contained. This allowed them to mix with ponded rain water in the POL secondary containment system. The water was eventually allowed to drain to the oil water separator and then to the POTW. Hazardous waste discharge is the accidental or intentional spilling or emitting of hazardous waste into or onto land or water. Federal regulations require all hazardous waste be containerized, thus preventing it from discharging to the environment

P 1: Base Findings Data.txt - 1:310 (1590:1590) (Super)  
Codes: [Performance]

Pollution Prevention Plan has not been updated since its publication in March 1996

P 1: Base Findings Data.txt - 1:311 (1592:1593) (Super)  
Codes: [Performance]

Routine building inspections to determine conditions of asbestos-containing materials are not being performed or documented

P 1: Base Findings Data.txt - 1:313 (1605:1611) (Super)  
Codes: [Performance]

During 1997, there have been permit limit exceedences at four storm water outfalls. These exceedences are not especially significant in terms of environmental protection, but they clearly represent a violation for which EPA could take enforcement action. Tyndall AFB is currently the only base within AETC which has an individual NPDES permit which establishes pollutant limits at storm water outfall points. The causes of the limit exceedences have not been determined, and it was not evident that action has been taken to establish causes or current problems

P 1: Base Findings Data.txt - 1:315 (1620:1622) (Super)  
Codes: [Performance]



The restoration program administrative record has not been updated for approximately 1-1/2 years. Although 40 CFR 300 does not explicitly define how often the administrative record should be updated, HQAETC/CEVR recommends an update quarterly

P 1: Base Findings Data.txt - 1:317 (1630:1640) (Super)  
Codes: [Performance]

Monitoring of community Water Systems must be completed in order to assure compliance with mandated Maximum Contaminant Levels (MCLs). Inorganic and organic sampling and analysis must be completed in accordance with the compliance period. Sampling and analysis is completed by the Texas Natural Resources Commission and results are provided to Lackland Air Force Base. A review of drinking water records at the Bioenvironmental Engineering shop indicates that numerous samples have not been collected or analysis results have not been received or filed. Examples of missing or incomplete data include quarterly nitrate samples for a four-year period at each entry point to the distribution system, asbestos sampling at each entry point to the distribution system, organic and inorganic analysis at wells 3 (Bldg 246), 1 (Bldg 104), or 5 (Bldg 4360), cyanide and fluoride at any location, and secondary constituent levels at most entry points to the distribution system

P 1: Base Findings Data.txt - 1:319 (1646:1648) (Super)  
Codes: [Performance]

The installation has an inactive Hazardous Material Management Process (HMMP) team. The team should be assembled as directed in AFI 32-7086. At the present time, though, there has been no activity or meetings

P 1: Base Findings Data.txt - 1:325 (1676:1679) (Super)  
Codes: [Performance]

The Spill Prevention and Response Plan dated 1 Dec 93 contains outdated bulk fuel tank information in Appendix 1 to Annex B. Specifically, new tankage 555 and 559 JP8 AST are not listed, and deactivated USTs 430 (1-6) JP8, 182 (1-6) JP8, and AST 378 diesel have not been removed from the plan

P 1: Base Findings Data.txt - 1:326 (1681:1681) (Super)



Codes: [Performance]

INRMP may not meet 30 Jun completion date. Final plan has minor typographical errors

P 1: Base Findings Data.txt - 1:327 (1683:1688) (Super)

Codes: [Performance]

An unlabeled 55-gallon drum with unidentified contents has been left in the open with no bung in the drum cover. Rain water has accumulated on top of the drum and has undoubtedly contaminated the drum contents. In addition a 10-gallon container of ""BLOC-GUARD"" concrete sealer with a punctured lid was found near the unlabeled drum. Both containers should be considered potentially hazardous waste and should therefore be appropriately labeled and stored until a hazardous waste determination is complete and documented

P 1: Base Findings Data.txt - 1:329 (1696:1705) (Super)

Codes: [Performance]

Arizona Department of Environmental Quality (ADEQ) conducted an inspection of Gila Bend's water system on 26 Jan 1998. ADEQ issued a letter dated 30 Jan 1998 directing that corrective actions be undertaken in six areas. Four of these deficiencies have been remedied as of this date, but two have not. These are: 1) need to install a new concrete slab around Well 4, and 2) need to repair/replace a defective pressure relief valve on Well 4. Although ADEQ directed these actions be taken within 30 days, they have not. There is an unresolved disagreement between the Air Force and the Gila Bend contractor regarding the cost of the new concrete slab, and the replacement valve provided by the Air Force to the contractor does not have adequate instructions for installation and operation. Contractor is now attempting to obtain needed information from the valve manufacturer

P 1: Base Findings Data.txt - 1:330 (1707:1713) (Super)

Codes: [Performance]

Deficiencies noted are: (1) the plan is not signed as required by permit; (2) the annual site compliance evaluation has not been performed since the plan has been in existence. Arkansas general storm water permit requires that the facility be inspected annually to assess compliance with actions contained in the plan for the purposes of taking corrective action and for updating the plan to reflect changes made in the facility (new or terminated activities or missions). A written



report of each annual site compliance evaluation must be prepared and kept on file

P 1: Base Findings Data.txt - 1:339 (1760:1761) (Super)  
Codes: [Performance]

Both refuse containers in the lodging parking lot were overfilled. The trash in the containers was holding the lids open

P 1: Base Findings Data.txt - 1:343 (1781:1786) (Super)  
Codes: [Performance]

Building 156 contains a paint booth which is occasionally utilized to paint aircraft parts. This facility is subject to the Aerospace NESHAP, which will require compliance by September 1, 1998. Various operational aspects of this facility do not currently meet the requirements of this regulation. These include improper spray gun cleaning procedures and noncompliant wipe cleaning solvent. More detail can be found in the ""AETC Summary Report for Aerospace NESHAP Evaluations"" completed in August 1997

P 1: Base Findings Data.txt - 1:347 (1804:1808) (Super)  
Codes: [Performance]

Mogas unit clipboard showed issues for 14 January 1998, however, the vehicle inspection form was not signed off for that day. Refueling vehicles are required to be inspected each day the equipment is used (AFI 23-201, para 6.13.1). On the same unit the manhole cover and the sump drain were not secured. All access points and sump drains on ground fuel equipment are required to be secured (AFI 23-201, para 4.2.1)

P 1: Base Findings Data.txt - 1:354 (1841:1844) (Super)  
Codes: [Performance]

Documentation for backflow prevention devices 743-1 and 2, 745-1 through 3, and 747-1 showed these were installed 6/12/95. These devices have not received all required annual tests. IAW 30 TAC Section 290.44(g) and (h) states these devices must be tested upon installation and at least annually thereafter

---



Code: Resource {15-4}

P 1: Base Findings Data.txt - 1:9 (41:45) (Super)

Codes: [Resource]

The exhaust hood in Bldg 387 does not provide the proper air velocity of 150 linear feet per minute at the face of the hood. This may present a potential health hazard to individuals mixing the pesticides. Bioenvironmental Engineering has tested the venting system and determined that it was not meeting the specifications established in military handbook 1028/8A, Design of Pest Management Facilities

P 1: Base Findings Data.txt - 1:40 (203:204) (Super)

Codes: [Resource]

The outside mixing area has several cracks and expansion joints that need sealing. A work order has been submitted, but is overdue

P 1: Base Findings Data.txt - 1:105 (522:524) (Super)

Codes: [Resource]

Recyclable paper in considerable quantities is being dumped in dumpsters. Also, inappropriate materials, such as alkaline batteries, have been found, although probably from non-base affiliated dumpsters. (The batteries were removed.) This is a recurring problem

P 1: Base Findings Data.txt - 1:106 (526:527) (Super)

Codes: [Resource]

Dumpsters contain yard waste barred from landfills. This is a recurring problem for the base

P 1: Base Findings Data.txt - 1:144 (713:715) (Super)

Codes: [Resource]

Supplied Air Respirators or self-contained breathing apparatus meeting OSHA standards for construction and operation must be accessible outside each well chlorinator room wherever chlorine gas is used



P 1: Base Findings Data.txt - 1:194 (987:988) (Super)  
Codes: [Resource]

Pesticide Management vehicles are not painted with chemical-resistant coating and are not equipped with bed liners

P 1: Base Findings Data.txt - 1:239 (1212:1216) (Super)  
Codes: [Resource]

State regulations require backflow prevention assemblies to be tested annually. Several assemblies have annual inspections required in the next 2-3 weeks. Gila Bend AFAF does not currently have a trained and certified person to manage the program and conduct annual tests. There is currently a 15-day gap between the departure of the last backflow prevention program manager and the time the new manager is expected to be trained and certified

P 1: Base Findings Data.txt - 1:241 (1223:1226) (Super)  
Codes: [Resource]

Compressed gas cylinders were not included in the AF Environmental Management Information System (EMIS) tracking mechanism. Personnel were aware and had identified this fact in their internal surveillance program. They have developed milestones and an action plan to bring compressed gases into the EMIS tracking system

P 1: Base Findings Data.txt - 1:291 (1484:1487) (Super)  
Codes: [Resource]

Air Force instructions require that each installation develop a CRMP and maintain a database and map information. An on-call contractor (Dames & Moore) is developing a CRMP but work is not yet complete. The CRMP is scheduled for completion after consultation between the Air Force and SHPO concerning the significance of these properties

P 1: Base Findings Data.txt - 1:292 (1489:1493) (Super)  
Codes: [Resource]

Air Force instructions require that each installation develop a Cultural Resources Management Plan (CRMP) and maintain a database and map information. An on-call contractor (Wolpert) is developing a CRMP for the Barry



Goldwater Range but work is not yet complete. The CRMP is scheduled for completion after consultation between the Air Force and State Historic Preservation Officer (SHPO) concerning the significance of the resources

P 1: Base Findings Data.txt - 1:293 (1495:1501) (Super)  
Codes: [Resource]

The Goldwater Range has a requirement under AFI 13-212 to prepare a Comprehensive Range Plan and an Integrated Natural Resources Management Plan (INRMP) under AFI 32-7064. There is an additional requirement and time constraints under the Sikes Act Amendment of 1998. Range Management Office is preparing the studies for land withdrawal which were anticipated to be included in the range plan. The Sikes Act requires the plan by 2001, but the LEIS information will not be available in time for contract monitoring and contractor personnel will be required

P 1: Base Findings Data.txt - 1:295 (1507:1511) (Super)  
Codes: [Resource]

It was noted that all base sanitary sewer, storm sewer, and drinking water system drawings were dated most recently in the mid to late 1980s. Maintenance engineering has indicated that the maps are presently being updated in the GIS system, but this will take approximately six months more to complete. Current and accurate utility system drawings are necessary to properly diagnose system problems and also to respond to emergency situations

P 1: Base Findings Data.txt - 1:300 (1543:1549) (Super)  
Codes: [Resource]

In addition to hazardous waste, building 6011 (the 90-day storage facility) is also receiving hazardous materials. Due to the lack of a centralized hazardous materials pharmacy, stockpiles of unwanted/unused materials are sent to the 90-day facility. This practice increases the amount of hazardous waste being generated by Tyndall AFB. Most of these materials are still useful, and in fact many have never been opened. While efforts are made by the hazardous waste program manager to recycle these materials for use within Tyndall, the proper resources are not available to make this happen efficiently or effectively

P 1: Base Findings Data.txt - 1:331 (1715:1717) (Super)  
Codes: [Resource]



In 1995, there was no solid waste management plan. There is now a very cursory one contained in the P2 plan, but it is totally lacking in detail. The OPR is aware of the problem and has programmed for an improved plan

P 1: Base Findings Data.txt - 1:332 (1719:1722) (Super)  
Codes: [Resource]

AFI 32-7065 requires Altus AFB to have a contingency CRMP. A cultural survey to determine that there are no known historic or archaeological resources has been conducted, and a draft plan developed. University of Oklahoma is working with the base program manager to complete the plan

---

Code: Training {13-1}

P 1: Base Findings Data.txt - 1:68 (359:363) (Super)  
Codes: [Training]

30 TAC 330.1004(i)(3) requires generators of special waste containing free liquids to place ""absorbent material sufficient to absorb 15% of the volume of free liquids"" in the container. Personnel were not aware of this requirement, and did not have any absorbent material on hand at the location where the wastes were boxed up (the old incineration location)

P 1: Base Findings Data.txt - 1:92 (471:472) (Super)  
Codes: [Training]

Mr. Jesse Kirvin, the Contractor Pest Management Supervisor, does not have a Florida (state) Pesticide Applicator License. This is required before beginning the job

P 1: Base Findings Data.txt - 1:142 (706:708) (Super)  
Codes: [Training]

There were numerous ""jerry"" cans containing different chemicals that were not labeled in accordance with AFOSH Std. 161-21. Personnel had only labeled the container with the name of the products. Personnel were shown the requirements in AFOSH Std. 161-21



P 1: Base Findings Data.txt - 1:154 (766:770) (Super)  
Codes: [Training]

Oklahoma Department of Environmental Quality (DEQ) requires personnel involved in inspections, risk assessments and screening analysis in target housing to be state certified. Bioenvironmental Engineering personnel perform screening sampling in target housing by request. They are trained and knowledgeable on all requests of LBP; however, their training does not meet DEQ certification requirements

P 1: Base Findings Data.txt - 1:182 (926:932) (Super)  
Codes: [Training]

Chromic acid waste and Alodene waste are being stored in the same container at the initial accumulation point. The MSDS for Alodene indicates that it should not be stored with strong acids, bases, reducing agents, or flammable or combustible materials. The MSDS for chromic acid states that it should not be stored with potassium-ferricyanide (in general, cyanide solutions and acids should not be stored together) because of the potential chemical reaction to form cyanide gas. Alodene contains potassium-ferricyanide. These two wastes are incompatible and need to be segregated. Similar waste streams exist in B82, H75, and B241

P 1: Base Findings Data.txt - 1:208 (1054:1059) (Super)  
Codes: [Training]

The custodial contractor had a hydrochloric acid bowl cleaner (10 quart bottles) stored on the same shelf beside about 5 cans of a powdered chlorinated abrasive cleaner. In the bottom of the cabinet were mixed gallon jugs. The floor of the cabinet was completely covered in gallon jugs. In the back left corner were two 1-gallon jugs of phosphoric acid based floor stripper. Directly in front of these jugs was a gallon jug of chlorine bleach. Also in the bottom of the cabinet were a couple bottles of window cleaner, a flammable/combustible material

P 1: Base Findings Data.txt - 1:215 (1093:1105) (Super)  
Codes: [Training]

Pint bottles of NSN 8030-00-142-9272, Turcoat Liquid Accelagold (alodine), were stored on the top shelf of the corrosive storage cabinet with three small



bottles of phosphoric acid and ammonium hydroxide NSN 6810-00-222-9643, 1/2 gal bottles(2), and NSN 6810-00-817-9929, one gallon bottles(2). The middle shelf of the same corrosive storage cabinet held a small bottle of sulfuric acid beside a box of 16-4 oz bottles of potassium hydroxide and a photographic kit box containing 5 gal of potassium hydroxide and a quart of acetic acid. The strong acids and bases stored on either of these shelves could react together violently. They should not be stored together. The alodine or corrosion prevention compound Material Safety Data Sheet (MSDS) states that it should not be stored with strong acids, bases, flammables, or combustibles. The alodine or corrosion prevention compound contains ferricyanide. If the alodine were to come into contact with a strong acid, such as the phosphoric acid on the same shelf, it could release cyanide gas. On the bottom shelf of the same corrosive storage cabinet were four additional gallon bottles of the alodine/corrosion prevention compound NSN 8030-00-823-8039

P 1: Base Findings Data.txt - 1:231 (1183:1185) (Super)  
Codes: [Training]

and 4) the Facility Managers  
are required to have asbestos awareness training, yet no one has been given responsibility to provide the training

P 1: Base Findings Data.txt - 1:268 (1355:1358) (Super)  
Codes: [Training]

A 55-gallon drum is used to store spent Freon-13 (trichlorotrifluoromethane) at an initial accumulation point in the sheet metal fabrication shop. The bung on the drum cover was loose and therefore did not provide an effective seal to prevent emissions from escaping to the atmosphere

P 1: Base Findings Data.txt - 1:297 (1524:1529) (Super)  
Codes: [Training]

Four drums containing residual ""peel-away 4"" and one drum containing paint chips and associated wastes are inadequately secured (i.e., missing bungs, unsecured lids, retaining ring absent) allowing rain water to mix with the material/waste. These materials are hazardous wastes, and as such, are required by federal regulations to be closed during storage. In addition two of the drums are rusting and deteriorating. Hazardous waste must be placed in containers that are in good condition



P 1: Base Findings Data.txt - 1:312 (1595:1603) (Super)  
Codes: [Training]

Fuel tanks at the POL are being stripped and repainted as part of general maintenance. The paint/primer being stripped from the tanks has been analyzed, and is known to have chromium levels in exceedance of the regulatory limit. Hazardous waste, in the form of paint chips, is being allowed to scatter onto the ground and is not being containerized. An attempt has been made to collect the paint chips at the base of the tank, however the tarps being used are torn and in poor condition. In addition, five garbage bags containing paint chips and associated waste are being used to contain waste known to be hazardous. Federal regulations require that hazardous waste be placed in competent containers, and be clearly labeled as hazardous waste, along with the accumulation start date

P 1: Base Findings Data.txt - 1:323 (1665:1668) (Super)  
Codes: [Training]

The radiophysics lab uses lead to form radiological shields for use in treating cancer patients. A significant amount of lead was found on the lab countertops, splashed onto walls, and on the laboratory floor. Because of its toxicity, waste lead must be controlled and properly contained within the labs initial accumulation point

P 1: Base Findings Data.txt - 1:342 (1775:1779) (Super)  
Codes: [Training]

All surface coating operations that paint miscellaneous metal parts at major emission sources in Pulaski County are required to comply with the VOC limits specified by state regulation. Personnel at the ANG Paint Booth clean their paint guns by spraying solvent, such as lacquer thinner and MEK, through the gun while the booth is in operation. These materials contain 100% VOCs and are in exceedance of the VOC limits established by regulation



## Bibliography

- Bleicher, J. Contemporary Hermeneutics: Hermeneutics as Method, Philosophy and Critique. London and Boston: Routledge & Kegan Paul, 1980.
- Cade, Fredrick B. Development of an Analysis Method to Identify The Root Causes of Findings From The Air Force Environmental Compliance Assessment and Management Program (ECAMP). MS thesis, AFIT/GEE/ENV/94-5. School of Engineering, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1994.
- Carson, Rachel. Silent Spring. Boston: Houghton Mifflin, 1962.
- Cahill, Lawrence B. and Raymond W. Kane. Environmental Audits. Rockville, Maryland: Government Institution, 1989.
- Gadamer, H-G. The Historicity of Understanding. *Critical Sociology, Selected Readings*, P. Connerton (ed.): 117-133. Harmondsworth: Penguin Books Ltd., 1976b.
- Glaser, B. G. and Strauss, A. L. The Discovery of Grounded Theory. Chicago: Aldine, 1967.
- International Organization for Standardization. ISO 140001: Environmental Management Systems. Milwaukee Wisconsin: American Society for Quality Control, 1996.
- Kaplan, B. and Maxwell, J.A. Qualitative Research Methods for Evaluating Computer Information Systems. *Evaluating Health Care Information Systems: Methods and Applications*, J.G. Anderson, C.E. Aydin and S.J. Jay (eds.): 45-68. Thousand Oaks, California: Sage, 1994.
- Kelle, Udo and others. Computer-aided Qualitative Data Analysis: Theory, Methods and Practice. Thousands Oaks, California: Sage, 1995.
- Kent, Robert H. 25 Steps to Getting Performance Problems Off Your Desk ... And Out of Your Life. New York: Dodd, Mead & Company, 1986.
- Lindhorst, Christopher M. An Analysis of the Air Force Environmental Management System. MS thesis, AFIT/GEE/ENV/97D-16. School of Engineering, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, December 1997.
- Makkreel, Rudolf A. Dilthey: Philosopher of the Human Studies. New Jersey: Princeton University Press, 1975.



- Meadows, Donella H. et al. The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind, 2nd ed. New York: Universe Books, Publishers, 1974.
- Muhr, T. ATLAS.ti Release 4.2 Users Manual. Berlin: Technical University of Berlin, 1997.
- Pandit, Naresh R. The Creation of Theory: A Recent Application of the Grounded Theory Method. Ph.D. dissertation. Nova Southeastern University, Fort Lauderdale FL, 1996.
- Radnitzky, G. Contemporary Schools of Metascience. Goteborg: Scandinavian University Books, 1970.
- Reinhardt, F.L. & Vietor, R.H.K. Environmental Management: A Framework for Business Strategy. *Business Management and the Natural Environment*: 1-53 to 1-69. Cincinnati, OH: South-Western College Publishing, 1996.
- Ricoeur, P. Hermeneutics and the Human Sciences. Cambridge: Cambridge University Press, 1981.
- Schot, J. & Fischer, K. Introduction: The Greening of the Industrial Firm. *Environmental Strategies for Industry: International Perspectives on Research Needs and Policy Implications*: 3-33. Washington, DC: Island Press, 1993.
- Starkey, R. Environmental Reporting. London: Earthscan Publications Ltd., 1996.
- Strauss, A. and Corbin, J. Basics of Qualitative Research: Grounded Theory Procedures and Techniques. London: Sage, 1990.
- Taylor, C. Hermeneutics and Politics. *Critical Sociology, Selected Readings*, P. Connerton (ed.): 153-193. Harmondsworth: Penguin Books Ltd., 1976.
- Thompson, J.B. Critical hermeneutics: A study in the thought of Paul Ricoeur and Jurgen Habermas. Cambridge: University Press, 1981.
- Vaughan, D. Kirk. Class lecture, RSCH 631, Qualitative Research Methods. School of Systems and Logistics, Air Force Institute of Technology, Wright-Patterson AFB OH, Fall Quarter 1998.



## Vita

Captain Arthur Gepner was born in Dodge City, Kansas, on March 17, 1969. He graduated from Dodge City Senior High School, Dodge City, Kansas in 1987 and attended the United States Air Force Academy where he graduated in 1992. At the Academy, he earned a bachelor's degree in Civil Engineering.

After graduation from the Academy, he was assigned to 60 CES, Travis AFB, in Fairfield, California, where he served as SABER Chief, Base Traffic Engineer, Chief of Engineering Support, and Chief of Heavy Repair. While in Fairfield, he was sent on Temporary Duty assignment to Riyadh, Saudi Arabia as part of Operation Southern Watch, where he served as Chief of Engineering. In April of 1995, he entered pilot training at Columbus AFB, Mississippi. In December of 1995, he was assigned to ASC/EM, Wright-Patterson AFB, Ohio, where he served as Plant 44 Supervising Facility Engineer. In September 1997, he entered the School of Engineering, Air Force Institute of Technology.

His next duty assignment will be to Air Force Material Command HQ to serve in the pollution prevention branch.

Permanent Address: 1702 7<sup>th</sup> Street  
Dodge City, KS 67801



| REPORT DOCUMENTATION PAGE   |   |  | Form Approved<br>OMB No. 0704-0188                                    |   |
|---|---|--|---|---|
| Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.  |   |  |   |   |
| 1. AGENCY USE ONLY (Leave blank)  |   | 2. REPORT DATE<br>March 1999                               |   | 3. REPORT TYPE AND DATES COVERED<br>Master's Thesis |
| 4. TITLE AND SUBTITLE<br>TEXTUAL ANALYSIS OF ENVIRONMENTAL COMPLIANCE ASSESSMENT PROGRAM FINDINGS   |   |  | 5. FUNDING NUMBERS  |   |
| 6. AUTHOR(S)<br>Arthur L. Gepner Jr., Captain, USAF   |   |  |   |   |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)<br>Air Force Institute of Technology<br>2750 P Street<br>WPAFB OH 45433-7765   |   |  | 8. PERFORMING ORGANIZATION<br>REPORT NUMBER<br><br>AFIT/GEE/ENV/99M-5 |   |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)   |   |  | 10. SPONSORING/MONITORING<br>AGENCY REPORT NUMBER                     |   |
| 11. SUPPLEMENTARY NOTES<br>Lt Col S. T. Lofgren, ENV  |   |  |   |   |
| 12a. DISTRIBUTION AVAILABILITY STATEMENT<br>Approved for public release; distribution unlimited.  |   |  | 12b. DISTRIBUTION CODE  |   |
| 13. ABSTRACT (Maximum 200 words)<br>The Department of Defense (DOD) is committed to having performance measures for environmental compliance and this is achieved through the Environmental Compliance Assessment Management Program (ECAMP). These ECAMP audits are designed to measure compliance performance and are ill suited to measure performance for the environmental management systems that underlie the compliance performance.<br>The purpose of this thesis was to provide insight into the Air Force Environmental Management System by using textual analysis on the ECAMP data. The analysis discovered eleven categories that are directly correlated to the data. The categories are performance, communication, documentation, coordination, training, guidance, notification, resource, human resource, material resource, and financial resource. The relationships among these categories show a hierarchical relationship. As a result the framework has suggested by the large number of categories under communication that communication related root cause is the largest type of problem environmental management organizations face. This methodology and the resulting framework has also exposed the shortcomings of not providing assessors the necessary training to write more informative reports that installation managers can use to correct root causes. |   |  |   |   |
| 14. SUBJECT TERMS<br>Environmental Management, Environmental Management Systems, Environmental Compliance Assessment Management Program, Audits   |   |  | 15. NUMBER OF PAGES<br>205  |   |
|   |   |  | 16. PRICE CODE  |   |
| 17. SECURITY CLASSIFICATION<br>OF REPORT<br>UNCLASSIFIED  | 18. SECURITY CLASSIFICATION<br>OF THIS PAGE<br>UNCLASSIFIED | 19. SECURITY CLASSIFICATION<br>OF ABSTRACT<br>UNCLASSIFIED | 20. LIMITATION OF ABSTRACT<br>UL                                      |   |